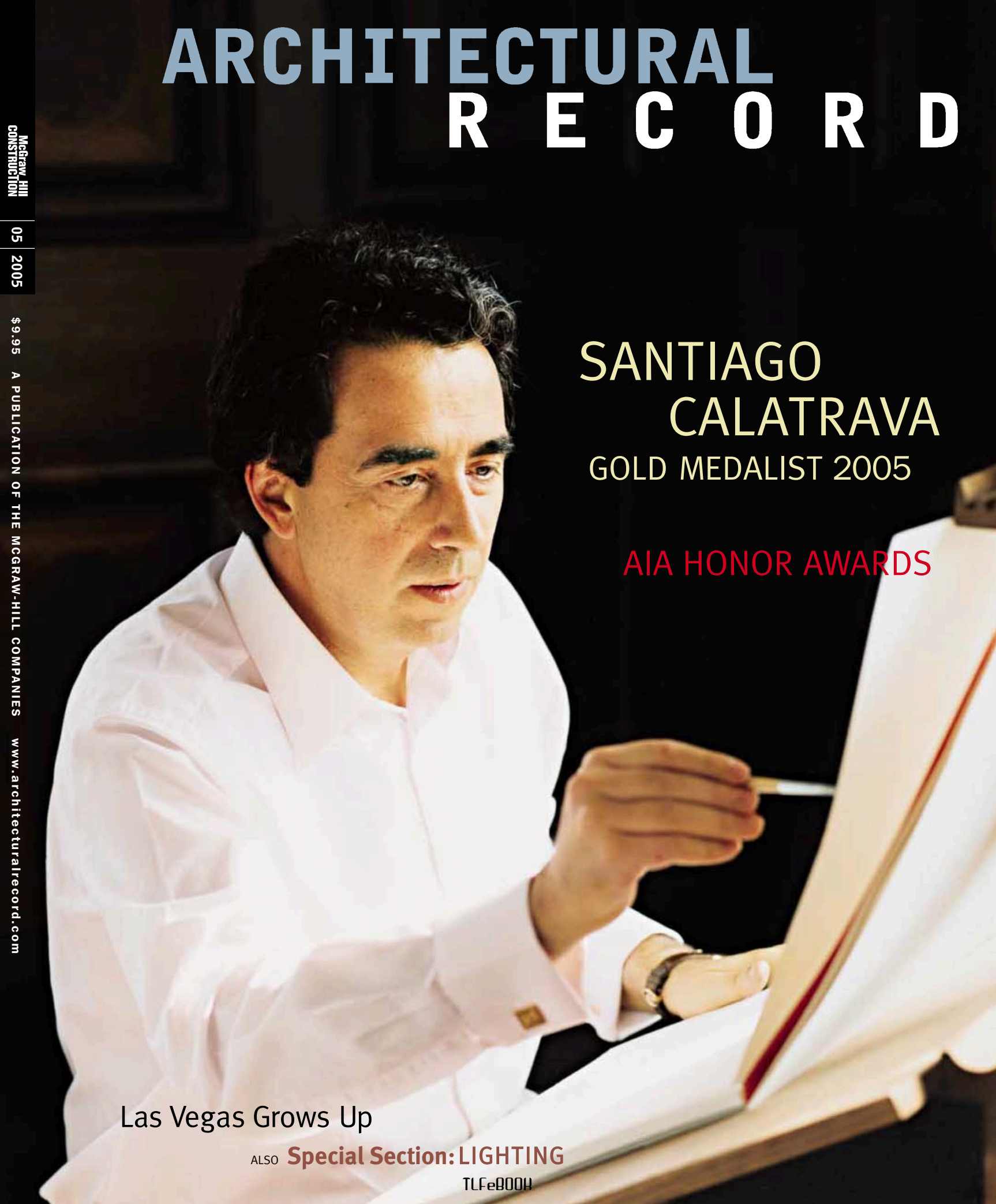
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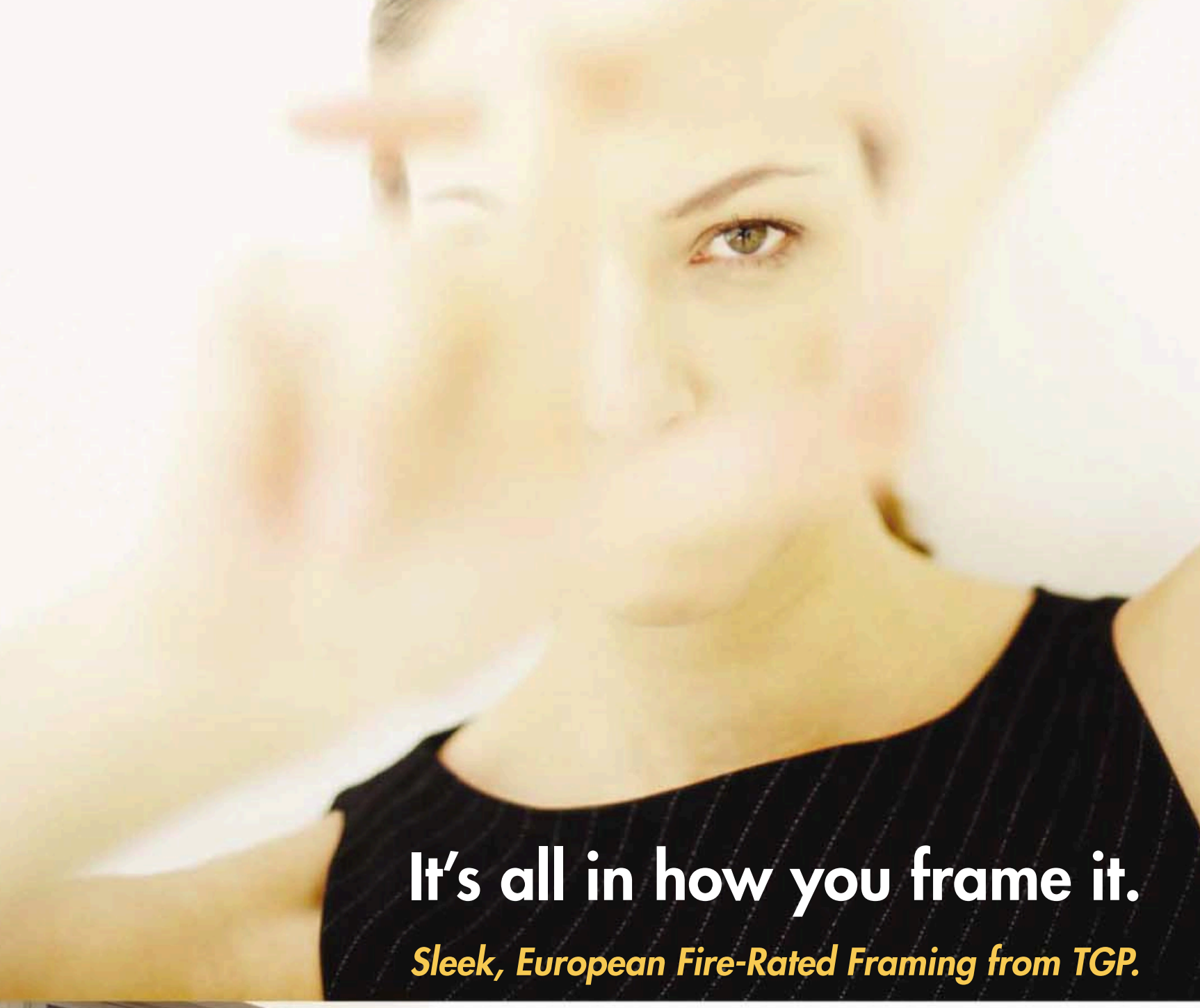
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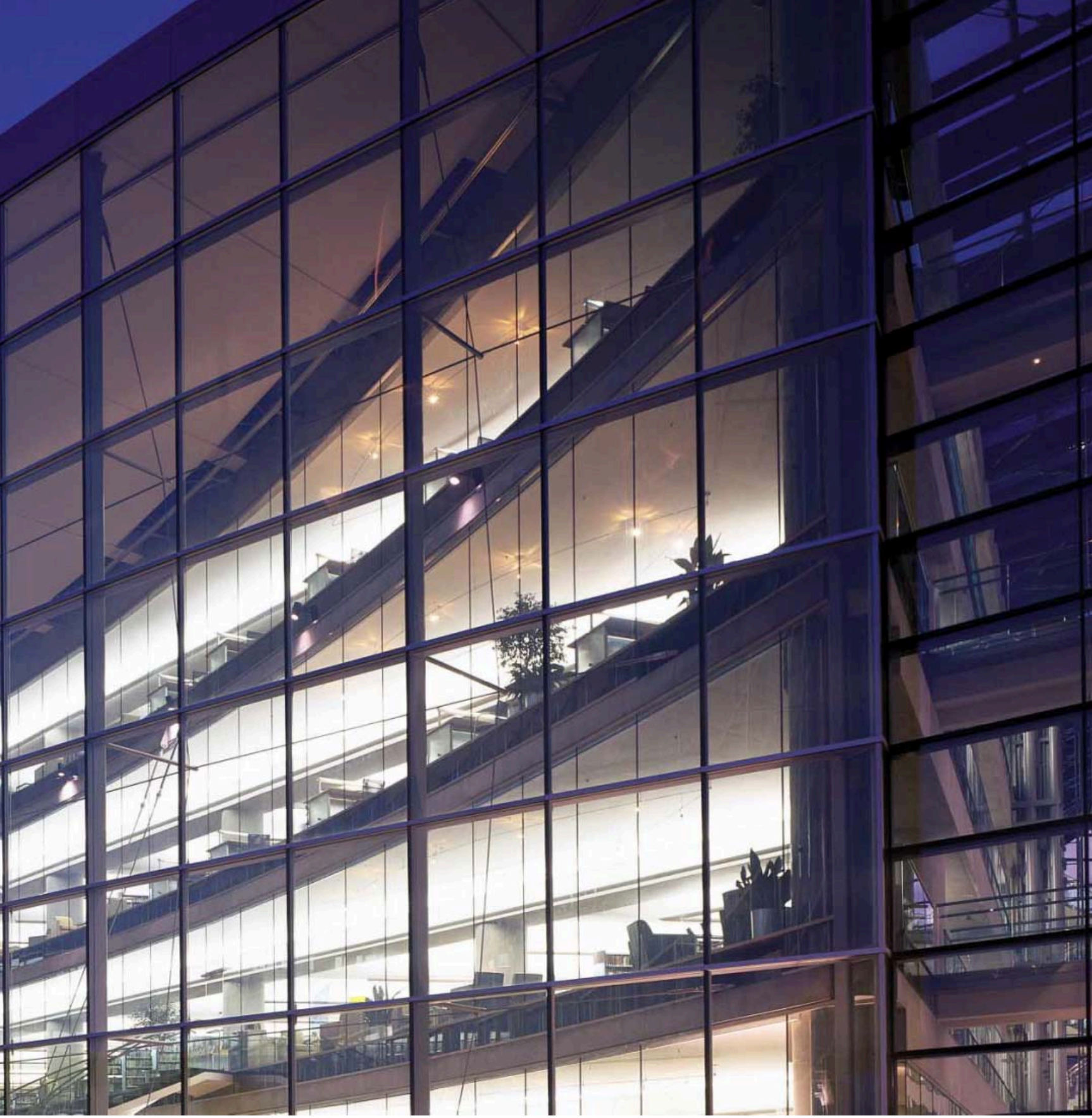
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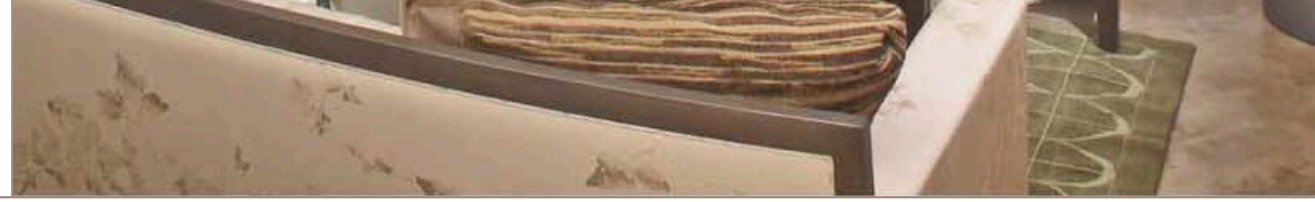


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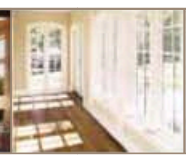
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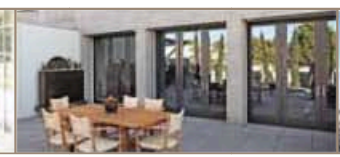
















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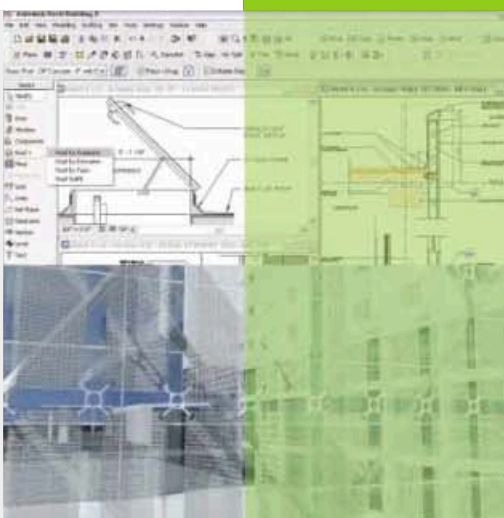
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## 05.2005

**On the Cover:** *Santiago Calatrava in his Zurich studio in April 2005. Photograph by Nathan Beck Photography*
**Right:** *Perimeter Institute. Photograph by Marc Cramer*

## News


**51 Is Renzo Piano America's default architect?**

**54 AIA to investigate decline in new licenses**

**66 On the Boards: Las Vegas**


## Departments


**25 Editorial: It's in the Air***

**37 Letters***

**83 Correspondent's File: Rome** *by Paul Bennett*

**91 Exhibitions: Mexico City's new architects** *by Sam Lubell*

**95 Archrecord2: For the emerging architect** *by Randi Greenberg**

**101 Books: Star architects and airports**

**109 Snapshot: Nomadic Museum** *by Beth Broome*

**355 Dates & Events***

**399 Record House of the Month** *by William Weathersby, Jr.**


## Features


**115 AIA Awards Introduction** *by Jane F. Kolleeny**
The AIA honors projects selected from more than 630 submissions.

**116 Architecture Awards***
Thirteen projects include a sauna and a corporate headquarters.

**130 Interior Awards***
A wide range of programs yield innovative solutions.*

**146 Urban Design Awards***
Providing open space and maintaining scale are evident priorities.

**152 25 Year Award***
Louis I. Kahn's Yale Center for British Art earns the honor.

**156 Firm of the Year Award***
Murphy/Jahn brings futuristic vision and high energy to the field.

**162 Santiago Calatrava** *by Alexander Tzonis**
The architect reveals a passion for building that has led him to create one of today's most notable bodies of work.

**176 Philip Johnson: An American Icon***
Three observers of the man and the architect address key issues of his life and his long-spanning career.

**186 Las Vegas Gambles on Growth** *by James S. Russell, AIA**
High growth and low costs is the city's economic-success formula.

**194 What's Left to Learn From Las Vegas** *by Clifford A. Pearson**
How a new mentality is affecting a city's built environment.


## Projects


**202 Knowlton School of Architecture, *Ohio*** *by Sara Hart**
*Mack Scogin Merrill Elam Architects*
A high-profile education program gets the facility it deserves.

**210 Perimeter Institute, *Canada*** *by Rhys Phillips**
*Saucier + Perrotte Architectes*
Site-sensitive physics building captures an institute's raison d'etre.

**218 Flint RiverQuarium, *Georgia*** *by Sarah Amelar**
*Antoine Predock Architect*
A building akin to a landform showcases local aquatic culture.

**224 Hall of Science, *New York*** *by Suzanne Stephens**
*Polshek Partnership*
After 40 long years, World's Fair leftovers get a new life.


* You can find these stories at **www.architecturalrecord.com**, including expanded coverage of Projects, Building Types Studies, and Web-only special features.

**The AIA/Architectural Record Continuing-Education Opportunity** *is "Born Again: A New Skin Offers a Fresh Start" (page 261).*




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# 05.2005

*(Contents continued from previous page)*







*Bigelow Chapel (top), photograph by Paul Warchol. Royal Academy of Arts Restaurant (bottom right), photograph by Richard Bryant/arcaid.co.uk. Urban wind turbine (bottom left), photograph courtesy Toronto Hydro Energy Services.*

## Building Types Study 845

**235 Sacred Spaces** *by Clifford A. Pearson*

**236 Bigelow Chapel, *Minnesota*** *by Camille LeFevre**
*Hammel, Green and Abrahamson*
Inspiring worship, a chapel illuminates a midwestern seminary.

**242 Leaf Chapel, *Japan*** *by Clifford A. Pearson**
*Klein-Dytham Architecture*
A small wedding chapel marries sacred and commercial interests.

**246 Holy Rosary Catholic Church, *Louisiana*** *by Robert Ivy, FAIA**
*Trahan Architects*
Concrete and glass bring parish church into the present day.

**252 Seaside Interfaith Chapel, *Florida*** *by James S. Russell, AIA**
*Merrill and Pastor*
To accommodate town's growing beachside service, a chapel is born.

For 6 additional Sacred Spaces projects, go to Building Types Study at **architecturalrecord.com**.

## Architectural Technology

**261 Born Again: A New Skin Offers a Fresh Start**
*by Sara Hart**
Recladding of a city hall is an investigative study of the relationship between architectural design and the life expectancy of materials.

**272 A Mighty Wind Is Blowing** *by Barbara Knecht**
The wind power industry is robust. Information is abundant. Clean, endless energy has never been at closer reach.

**281 Tech Briefs**

## Lighting

**309 Introduction**

**310 Creative Uses**

**315 Duvet** *by William Weathersby, Jr.**
*Andres Escobar & Associe; XS Lighting & Sound*
Evocative lighting complements a nightclub's ethereal landscape.

**320 Leadership Center at Cedarbrook** *by Alice Liao**
*Candela*
Smart illumination plan alleviates the "trapped in a meeting" feeling.

**326 Royal Academy of Arts Restaurant** *by Leanne French**
*MUMA; DHA Designs*
Color-changing effects highlight a restaurant's art and architecture.

**331 Lighting Products** *Rita Catinella Orrell*

## Products

**337 Contract Carpet**

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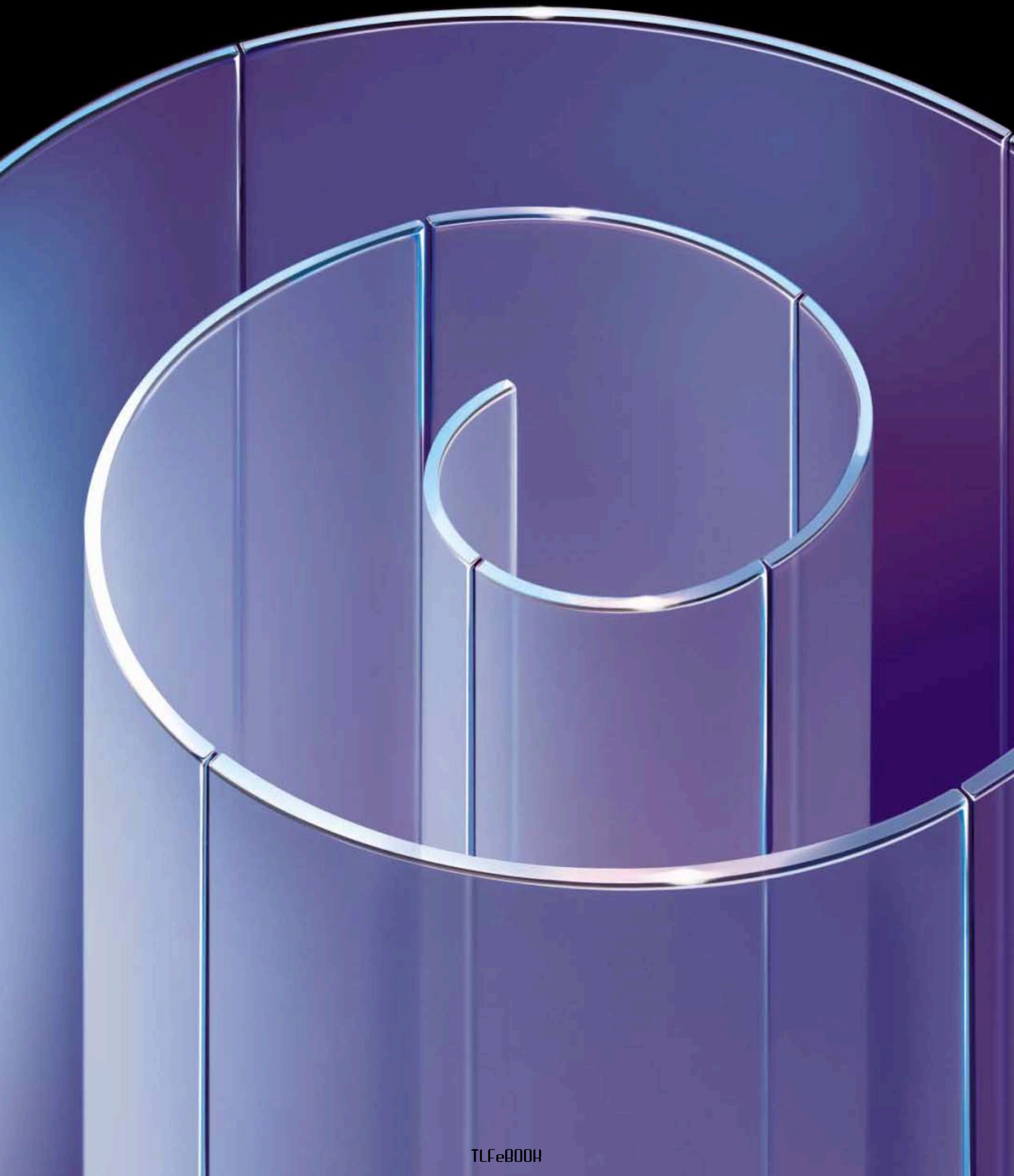
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DAY 40


DAY 41


DAY 70

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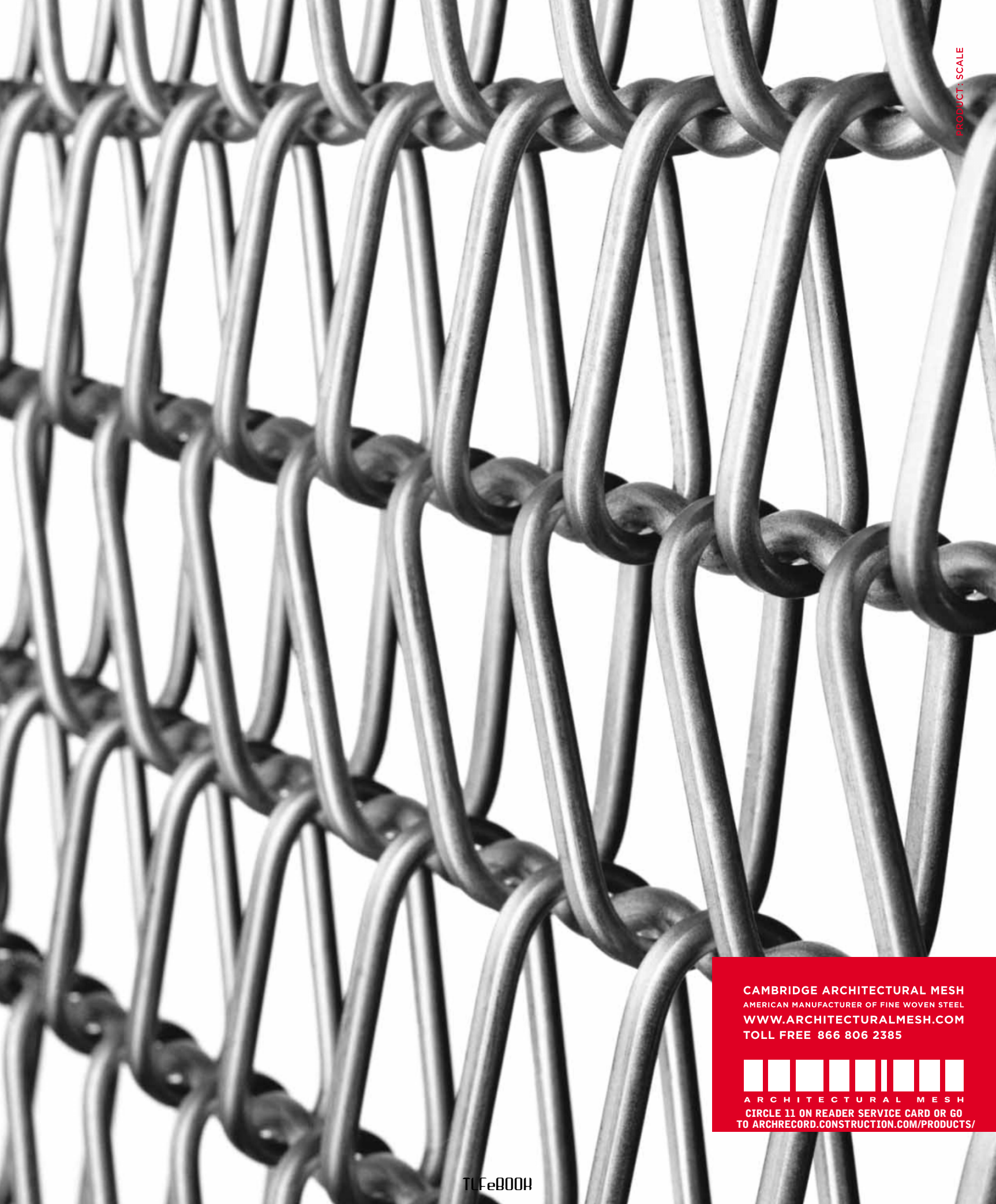
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# It's in the Air

# Editorial

**By Robert Ivy, FAIA**

*Something's in the air. Call it community-based design. Call it architecture for people. In any understanding, socially conscious architecture seems to be blossoming again. Kate Schwennsen, FAIA, the incoming president of the AIA and an educator, says the sea change is palpable in the design studio. According to Schwennsen, students seem interested in a different agenda from an earlier generation, which was more focused on career or technology. Quietly, the people-centered component of architecture is spreading like goodwill, putting designers and builders in touch with real people in real places.*

*Our collective hunger for humanistic design and planning is not new. In the not-so-distant past, think of Frederick Law Olmsted and the 19th-century parks movement, offering open space and fresh air for tenement-bound urban dwellers. More recently, remember storefront architecture of the late 1960s and 1970s? The attitude accompanied the haircuts and the tie-dyes; environmentalism of the same period had a strong social component.*

*While art with a capital "A" or design for design's sake attracts many young people, idealism provides another primary rationale for their vocation. As a group, students are often interested in helping individuals obtain higher quality of life, whether in housing or in public places. Graduation, however, can be a wake-up call. The business world offers few opportunities to spread our fellow feeling, much less our good works. Where, we wonder, can we exercise our skills on behalf of others?*

*Look around and see that architecture for people comes in different forms. It's not all about freebies. Michael Pyatok has built a practice with clients who need his services in special ways. The YWCA Family Village in Redmond, Washington, for instance, includes a diverse program of services and housing for homeless women with children. In California, Ann Fougeron designed women's clinics in Bay Area malls that create a sense of comfort while providing colorful, secure environments. On the opposite coast, in Massachusetts, architect Carol Burns designed a shelter called Casa Nueva Vida for embattled Hispanic women.*

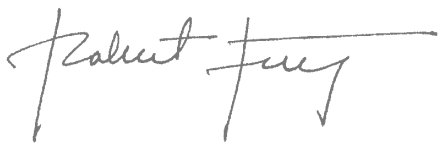
*Universities have long been in the hands-on business. Steve Badanes and Damon Smith have led a design-build studio that has created the Danny Woo Community Gardens (an urban park in Seattle) and the T.T. Minor Elementary School play area, among others. The University of Washington, where Badanes and Smith teach, has reached out to communities as far away as Mexico, spreading design power south. Still farther it spreads: The College of Architecture and Planning at Ball State University in Indiana recently headed to Southeast Asia. This year, 21 students made the trek to Sri Lanka, site of the devastating tsunami.*

*Many programs, like Auburn's Rural Studio in Alabama, are already superstars. You know about organizations like Habitat (and Architecture) for Humanity, which provide both basic shelter and disaster relief. And you probably recognize New York's Robin Hood Foundation, which redistributes Wall Street wealth to the public schools, employing talented designers for libraries. But do you know about Design Corps, which Bryan Bell founded in 1998 to provide decent housing for migrant workers? Or the theoretical programs by San Diego architect Teddy Cruz, such as "Living Rooms at the Border?"*

*Architect John Peterson, a San Francisco practitioner, started something entirely fresh that is growing into a powerhouse. Public Architecture, a nonprofit organization that his firm hosts, has evolved from its initial efforts at community building. Although only in its "adolescence," according to Peterson, it has come up with a great idea.*

*The "1% Solution," proposed by Public Architecture, suggests that architects donate a small but statistically meaningful percentage of their time toward the public good—a small, but powerful notion. John Cary, Public Architecture's executive director, hopes that architects can donate time or resources "without having to make extreme sacrifices." One percent translates into 20 hours of volunteerism, or 1 percent of financial resources, piddling amounts that, when added together with the work of many other architects, could make tremendous changes. The idea is smart, clean, and memorable.*

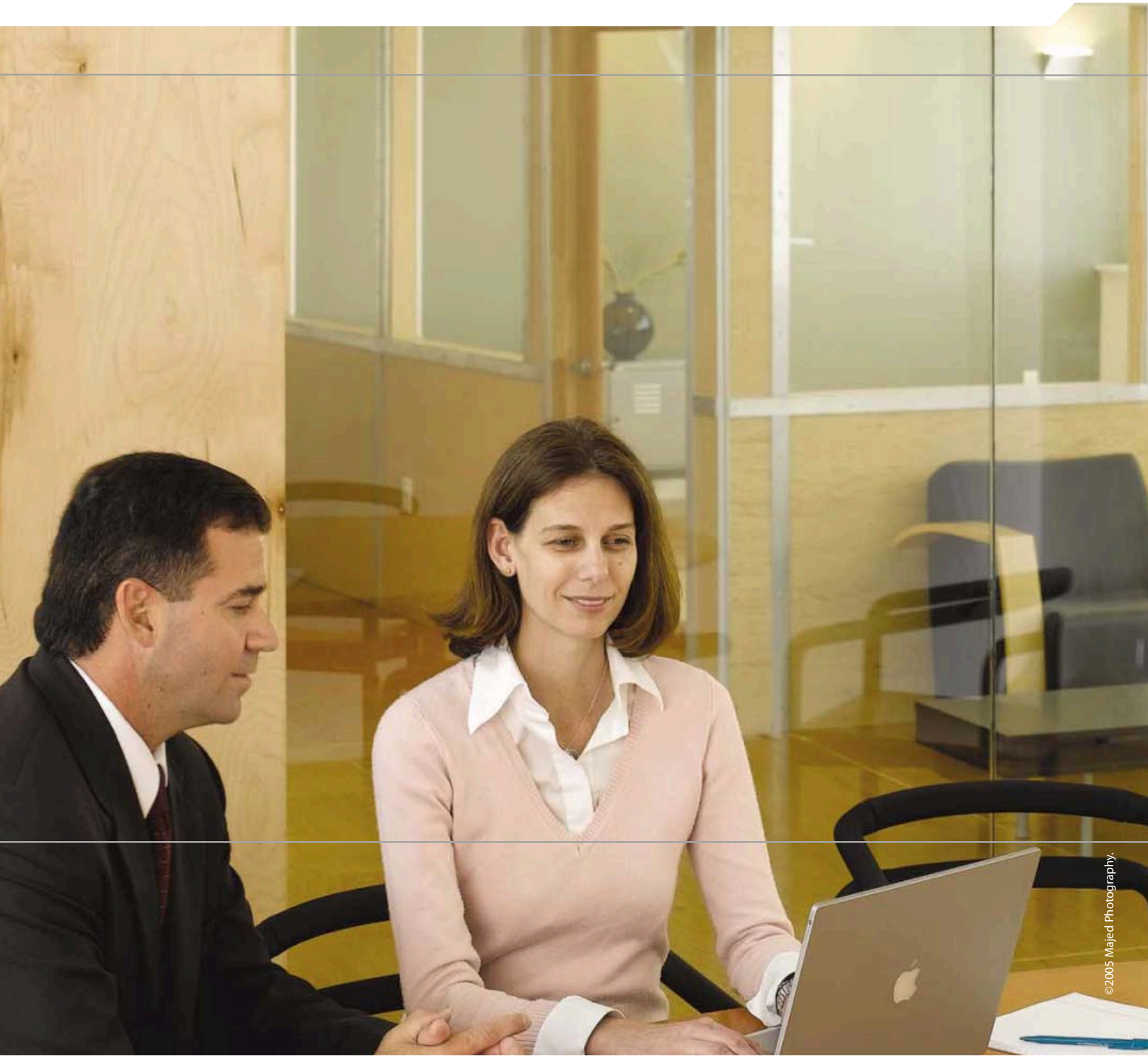
*With all this youthful enthusiasm, and all these programs, has the pendulum decisively swung from formalism to activism? Apparently, it's tilting in a new direction. Perhaps after a decade of technical and material advancement, armed with the realization that we can make anything we set our minds (and our computers) to, we are turning our attention to the fundamental question: Who are these amazing forms intended for?*





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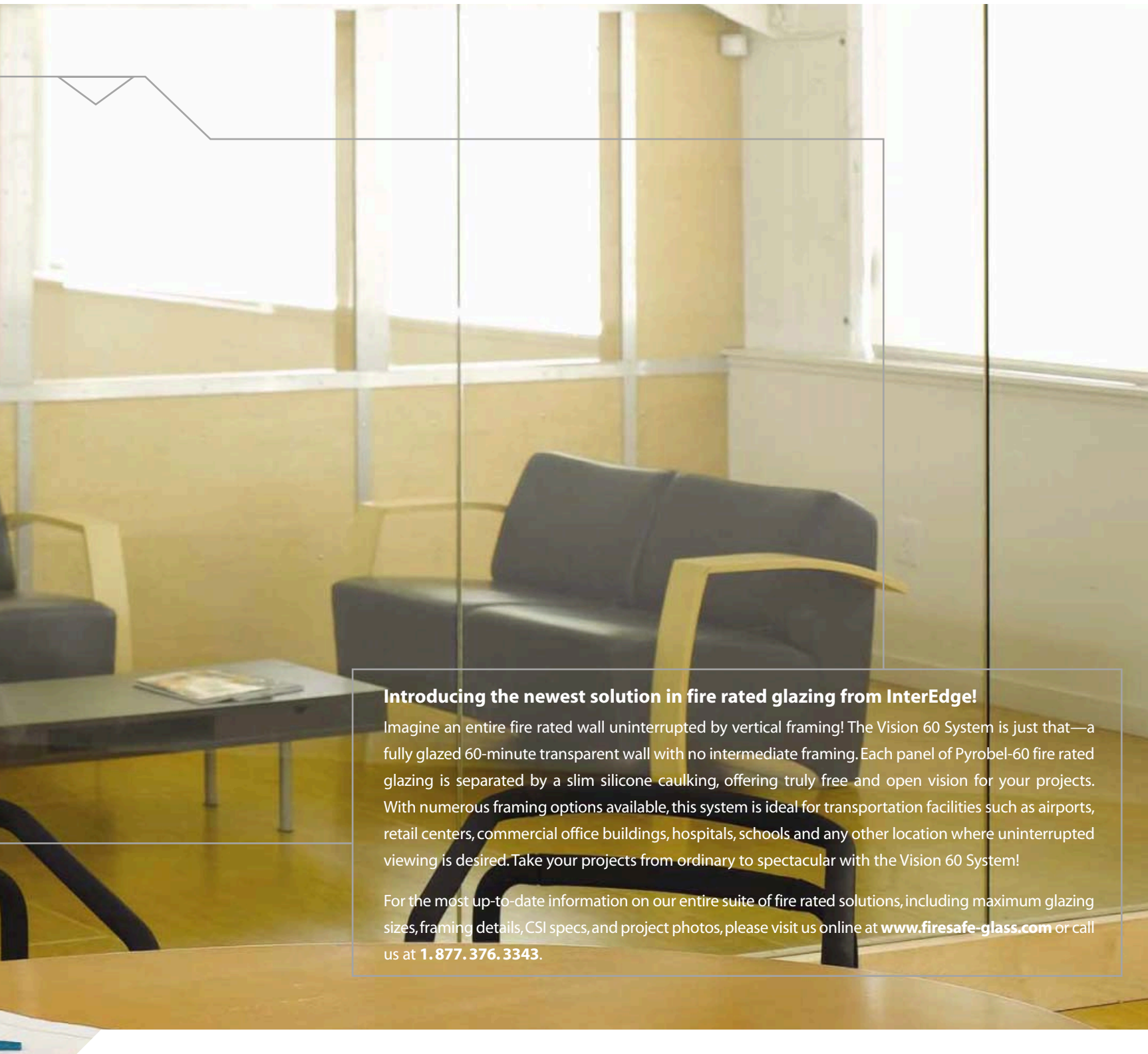
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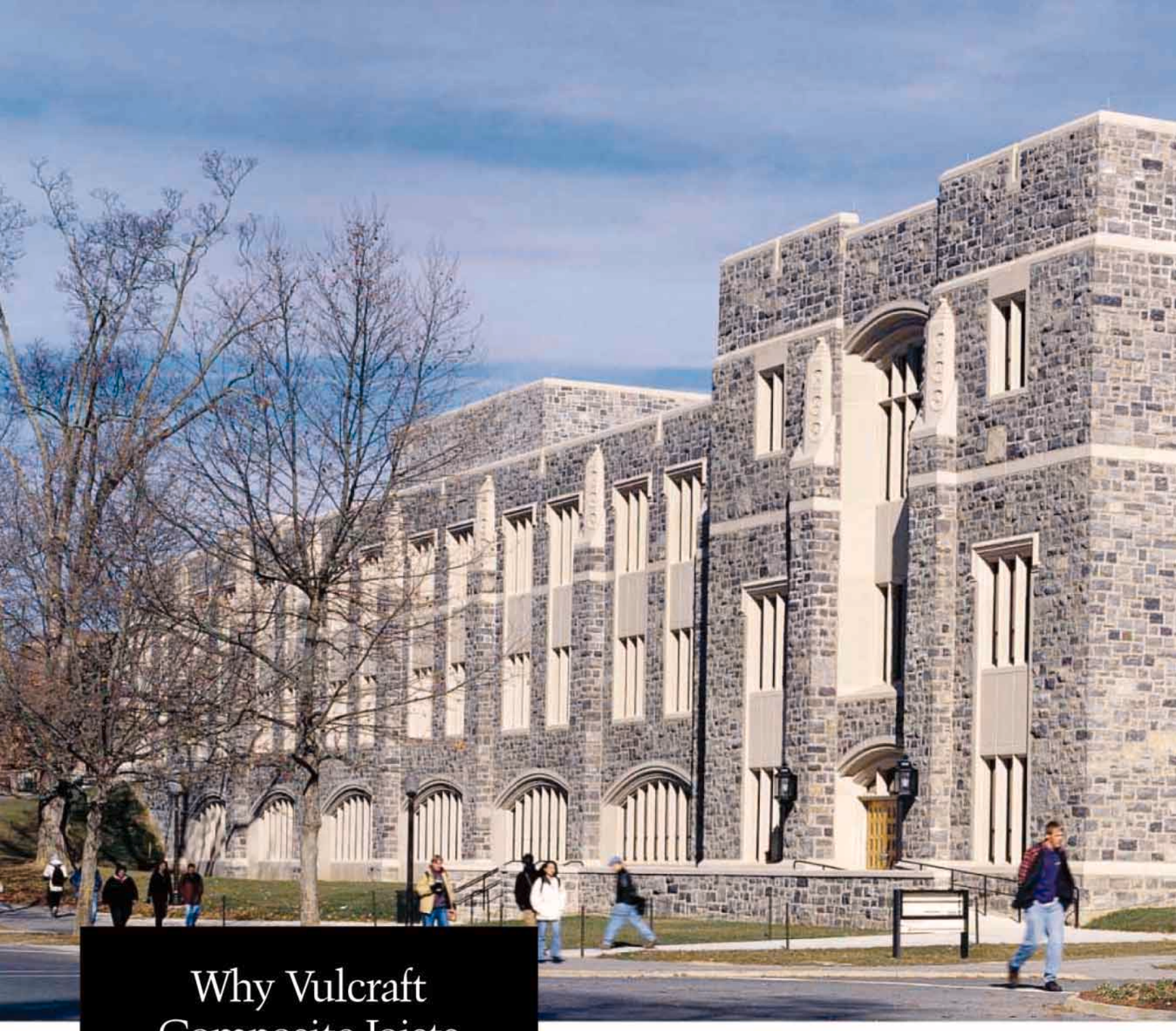
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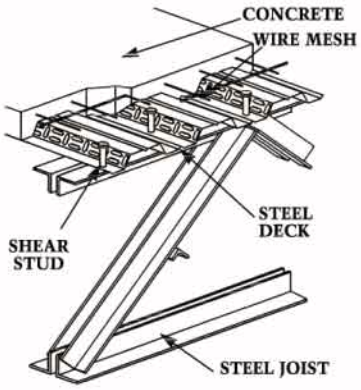
When planning the $21 million Torgersen Hall, Virginia Tech's advanced communication, information, and technology center, the architecture/engineering firm of Sherertz Franklin Crawford Shaffner, Inc. faced a number of design challenges. They included cost, flexibility in floor usage, large column free 40′ bays and ample space for HVAC ductwork.

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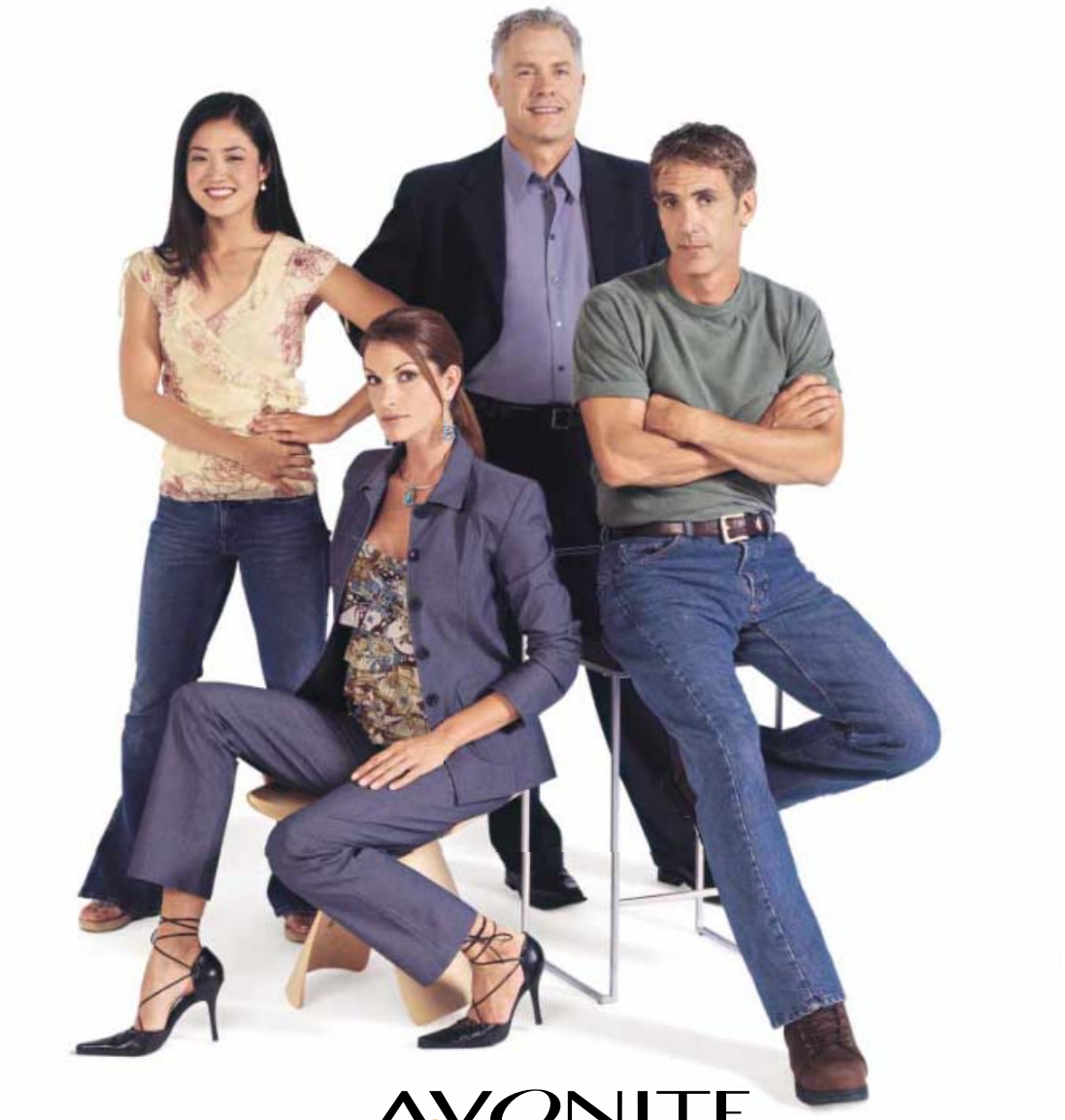
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World Trade Center PATH Station, New York, NY
Architect: Santiago Calatrava

# inspiration



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# Letters



**Sculpture housing sculpture**
I doubt I am the only architect who delighted in the inadvertent verity of the Record Houses 50th Anniversary issue's cover: the new Record House as a home for sculpture. Sculpture housing sculpture. It all finally makes sense!
*—Duo Dickinson*
*Via e-mail*

**Mother Nature's unfinished work**
Your article on Steven Holl's Turbulence House in April's Record Houses issue [page 185] states, "The final structure … appears integral to the mesa." Let's see: "Integral: constituting a completed whole." So, obviously a big, metal, round, shiny "stump" was exactly what nature had planned for the site but never got around to making. Could your editors really be more daft than that?
*—Derik T. Price*
*Fairbanks, Alaska*

**Nothing like a good read**
A quick note to congratulate you on another great issue [April 2005]! The piece you did on Record Houses was smart, inspiring, and very well done. I really enjoyed it.
*—David Rockwell*
*Rockwell Architecture, Planning and Design*
*Manhattan*

**Support your fellow architect**
Thank you for your March news item "Queens Museum drops Eric Owen Moss from renovation" [page 30]. Wouldn't it be nice to see some ethical support from the city's "shortlist" who are being considered to take over the project? They could support Moss by refusing to supplant him. Going along with Queens Museum executive director Tom Finkelpearl and his plan to replace Moss undercuts the idea and legitimacy of design competitions. It is time for architects to support their colleagues.
*—Gerald Gamliel Weisbach, FAIA*
*San Francisco*

**Sweet metaphors**
Robert Campbell, in his critique of MIT's former president's "shallow novelty-seeking" [April 2005, page 101], misunderstands the school's intent as well as denigrates the creative process of two of our finest architects. Great works, whether of poetry, art, or architecture, spring from metaphor.

And what's wrong with ingenuity as a metaphor? There's a rich history of architectural form that reflects the ingenuity of its users. While it's true that great invention has and will come out of bland buildings, there's no reason it can't come out of metaphorically ingenious ones. MIT's Computer Science department did revolutionize computing in a poorly designed concrete box. But can they not continue to do great things at Frank Gehry's Stata Center?

A call for metaphors of ingenuity might have produced, in lesser hands, a novelty building in the shape of a big brain. But Gehry is a better architect than that. His metaphor of the colliding village at the Stata Center is an apt and ingenious one that speaks of what's going on in science today as academic barriers between disciplines break down. It's well-thought-out and in no way shallow.

Nor is Steven Holl's sea sponge metaphor at



# Letters

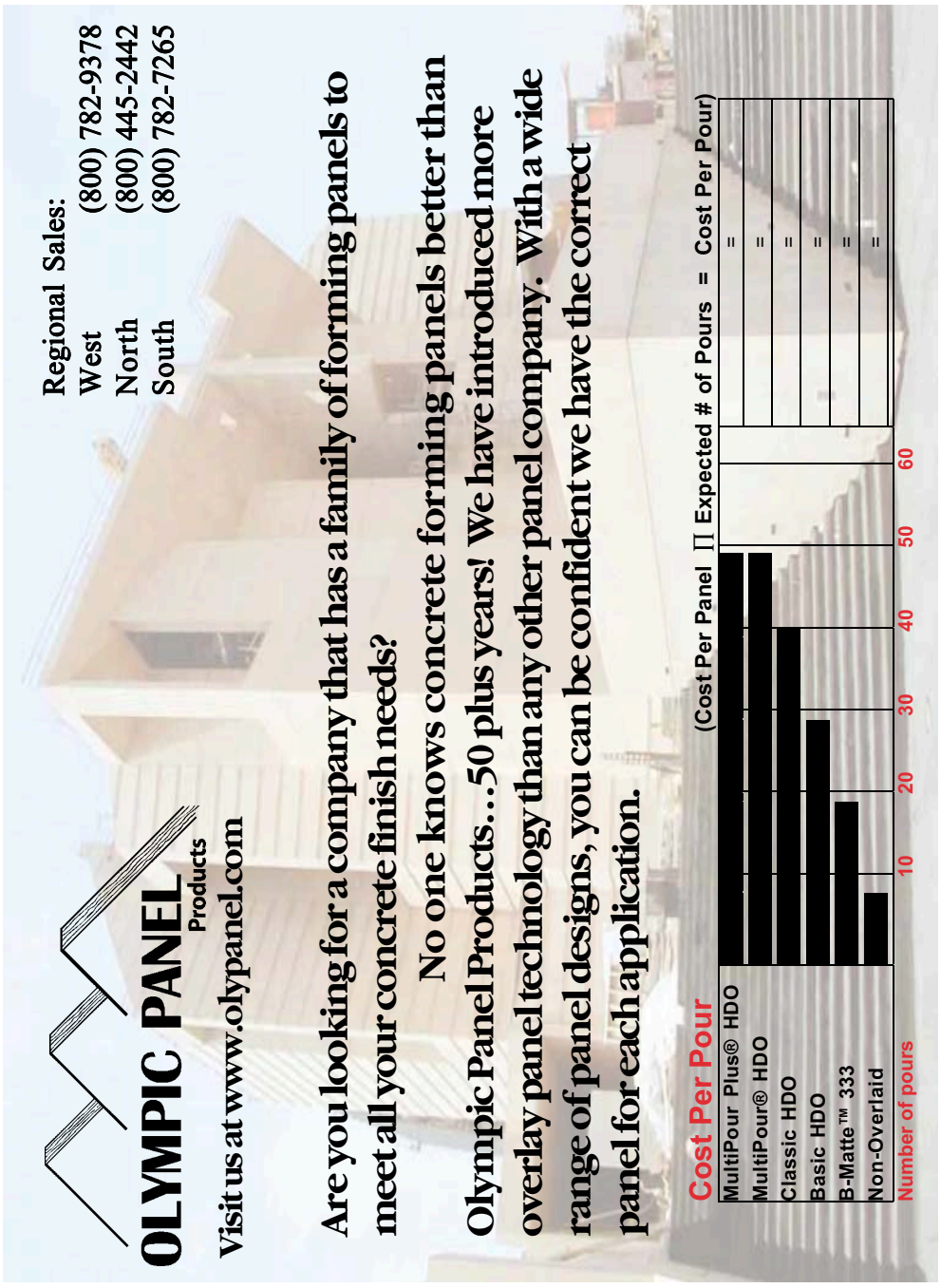
Simmons Hall a novelty. By breaking up the exterior with porous concrete voids and "lungs" that contain student lounges, Holl redefines scale and avoids a "brick wall" reading. His color-coding of the building's exterior in the form of a stress diagram accurately reflects the ingenuity of the engineering students who live there.

It's true that the corridor system at MIT has served the school well. But so have its more daring designs, the ingenious chapel and auditorium of Eero Saarinen and the sinuous dormitory of Alvar Aalto.

Behind MIT's recent building program is the desire to continue that tradition, not to commission novelty for its own sake. Many of the Institute's buildings from the 1970s to the 1990s were not only bland and featureless, but ill-suited and inflexible for their intended purposes.

Neither Gehry's nor Holl's buildings are without their flaws, but ingenious daring is tougher to pull off, and less crowd-pleasing, than reworking familiar forms.

*—Paul Restuccia*
*Boston*

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**A well-deserved honor**

I was quite thrilled to read in January's Record News that Santiago Calatrava, FAIA, has been selected as the 61st recipient of the AIA Gold Medal [page 25]. The Spanish-born architect was long overdue to receive the award.

Over the years, Calatrava has been designing thought-evocative structures—structures that indeed test the limits of engineering, from the Alamillo Bridge in Seville, to the Auditorio de Tenerife in the Canary Islands, and everything in between. He is the master of this kinetic genre, embedding structures into sculpture in creating architectural icons for cities. His architecture can be described as the art and science of the built environment.

To this polymath, I say congratulations, and to the AIA I would like to say thank you for choosing to honor a man who has challenged architectural students around the world, myself included. Architecture honors a new kind of hero.

*—Bobola Oniwura*
*Lagos, Nigeria*

**Exporting our dirty work**

When are we going to stop the Cro-Magnon slicing and dicing of the architectural profession ["Are We Exporting Architectural Jobs?," January 2005, page 82]? Design and competitions are "good"? Details and construction are "bad"? As architects, we beat our chests at how we're looked upon as effete elitists, and then we chop up the drawing process and send the "bad" parts out so architects in other countries can spend more hours and get less pay to do our dirty work. Not only that, but we're doing it at the expense of our own future graduates. Construction and detailing are not the enemy. We should be embracing these portions of the design process to produce better buildings. Period. Sending construction documents overseas only further distances us from creative solutions by rewarding repetition and trite designs. Let's leave Wal-Mart at Wal-Mart.

*—Patrick Stuart*
*Design Director*
*Neighborhood Design Center*
*Columbus, Ohio*

**Corrections**

The photographer cited for Casa Cocoon in the April feature "Five Cubes and a Blimp" [page 116] should have been Mark Munro, not Mark Mulder. The February feature on Jim Cutler [page 72] misstated the name of the landscape architect for Bill Gates's residence. He was Tom Berger of The Berger Partnership.

*Write to rivy@mcgraw-hill.com.*

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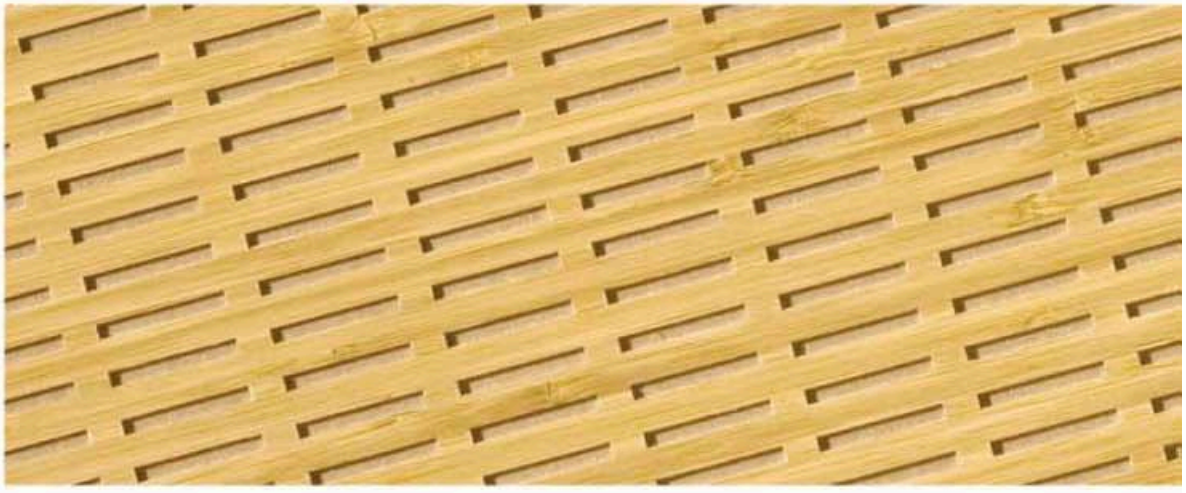
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# This month in Continuing Education



## In This Issue:

**Pages 284 – 291** Factors for Achieving Water Conservation Excellence: Why—and What—Today's Architect Should Know About Plumbing and Its Relationship to Sustainable Design
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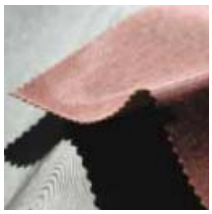
LEARNING OBJECTIVES:
- Understand the architect's role in water conservation
- Recognize what is required to earn points for LEED-NC Water Efficiency Credit 3
- Understand how to calculate Baseline and Design Case indoor water consumption

**Pages 293 – 297** Greater Vision: Alternate Window Materials in Commercial Buildings
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LEARNING OBJECTIVES:
- Understand window selection criteria and its impact on your projects and clients
- Identify primary advantages and disadvantages of different window framing materials in commercial buildings
- List and compare the advantages and disadvantages of sealed insulating glass and dual glazed systems
- Establish a method to determine the most appropriate window system for future projects

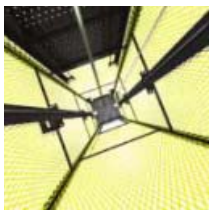
**Pages 299 – 303** The Art of Product Research and Selection
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LEARNING OBJECTIVES:
- Explore methods and best practices on the art of product research and selection
- Analyze product evaluation criteria used by established architectural firms and seasoned design professionals when specifying products
- Understand information typically required for approval of product substitutions on projects
- Review the types of product information generally required during various project phases

## Online:

**Vertical Materials Handling Systems aka Dumbwaiters.**
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LEARNING OBJECTIVES:
- Have a general knowledge of different vertical material handling systems and when to use them
- Identify key design and planning criteria
- Discuss the benefits of using vertical material handling systems

# This month at archrecord.construction.com



*Temple Bat Yahm Chapel and Campus, Courtesy Lehrer Architects*

### Building Types Study

This month we feature Sacred Spaces. See how architects now understand that simple is often more powerful than complex when it comes to expressing what is hallowed. On the Web, we feature an additional six projects not available in print.

### Daily Headlines

Get the latest scoop from the world of architecture.



*Project: City of Santa Cruz Accessory Dwelling Unit Program, Courtesy RACESTUDIOS*

### AIA Honor Awards

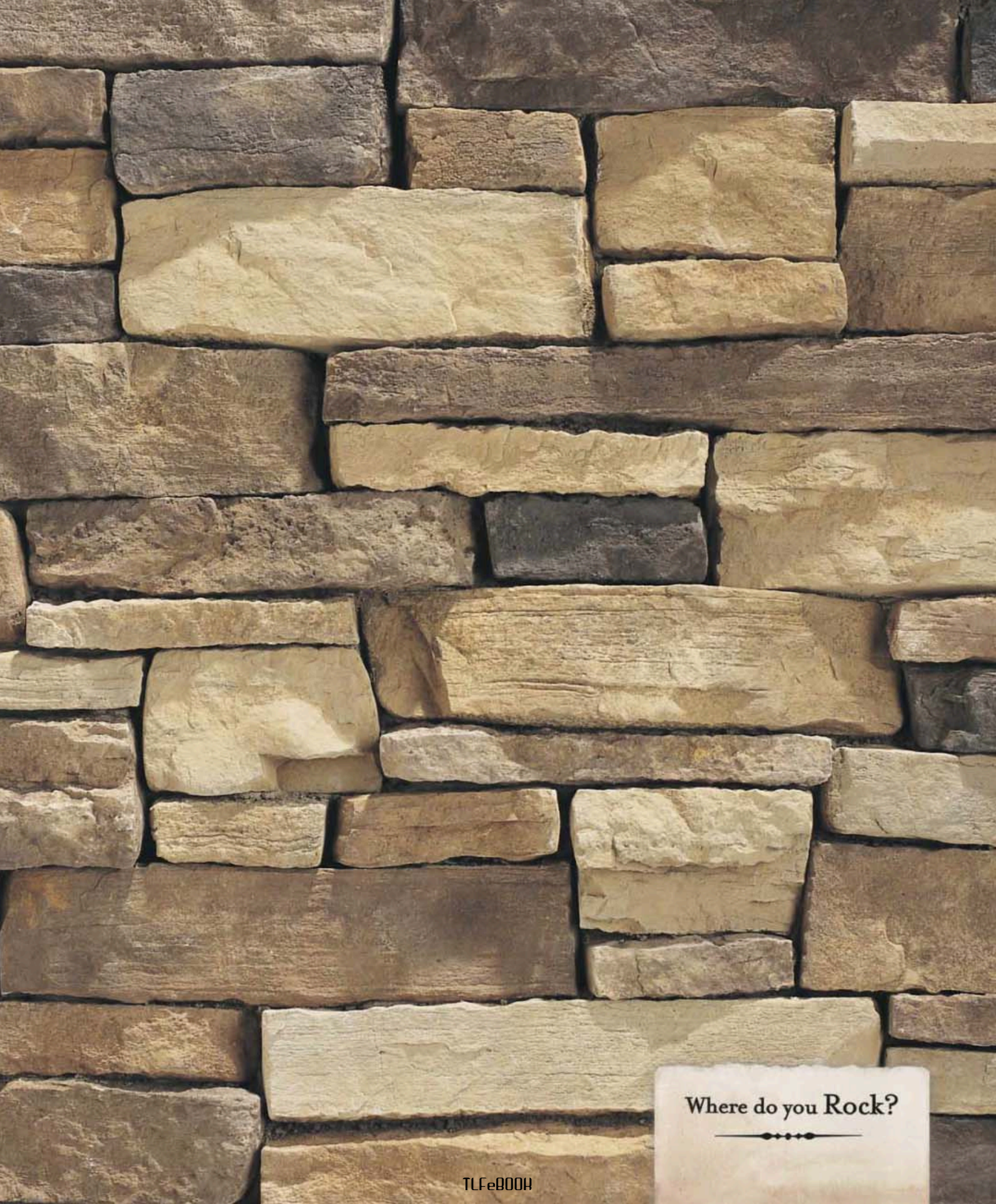
This month our Web site features the 2005 AIA Honor Award Winners. Have a closer look at the winners in the categories of Architecture, Interiors, Urban Design, 25-year Award, and Firm of the Year. Also in archrecord2, learn more about the five architects who have been awarded the 2005 Young Architects Award.



### Philip Johnson

Discover what three longtime observers of Philip Johnson—an admirer, a detractor, and his biographer—have to say about this famous figure's career. Also, revisit the 2001 interview AR had with Johnson that is exclusive to our Web site.

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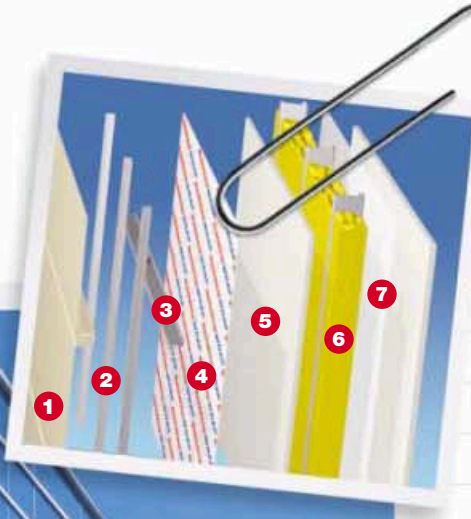
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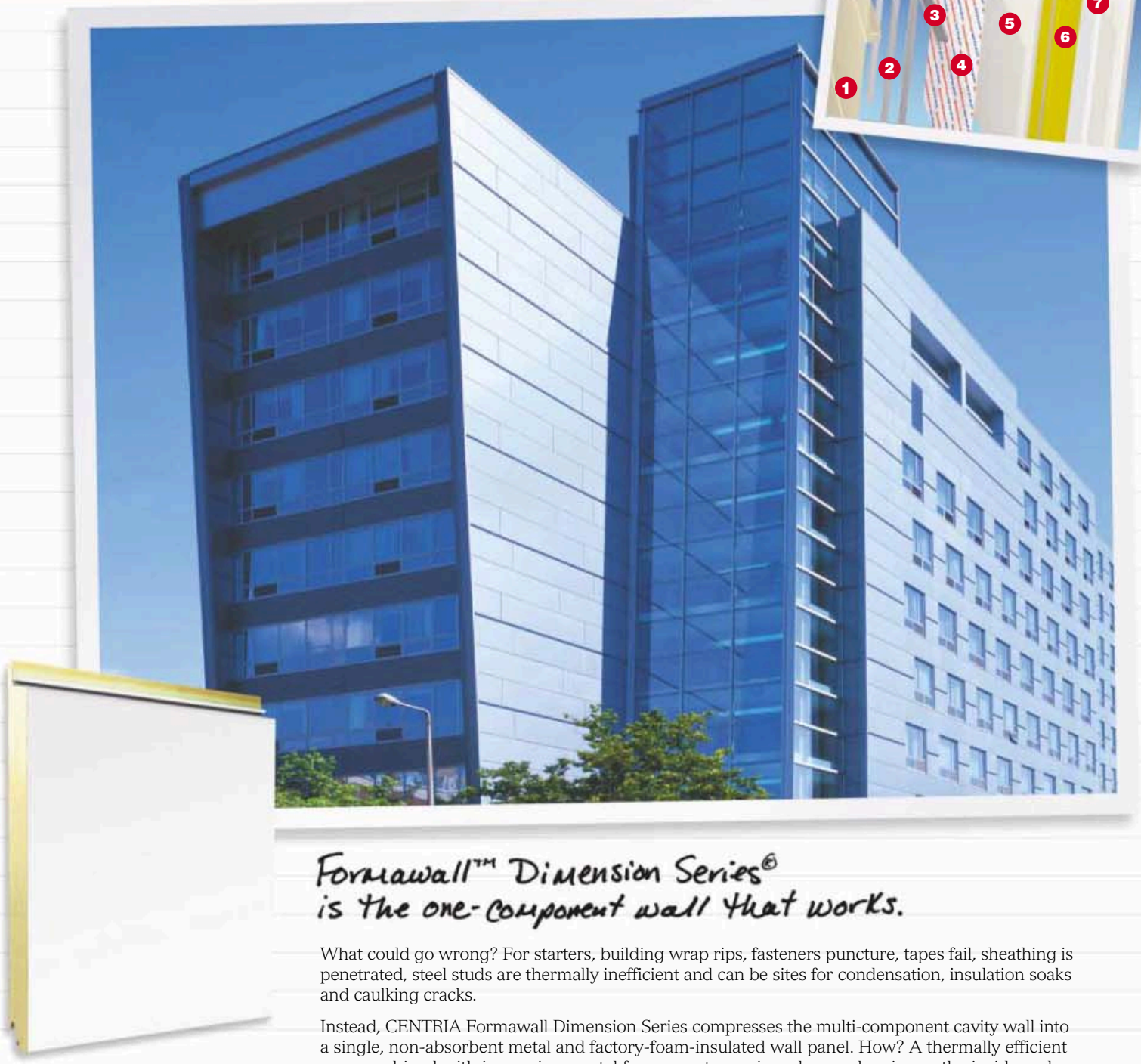
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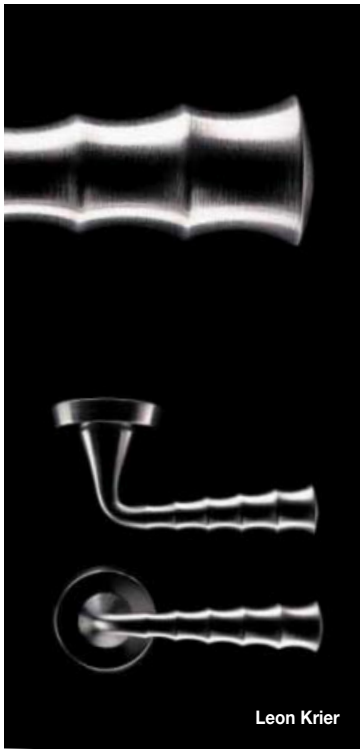
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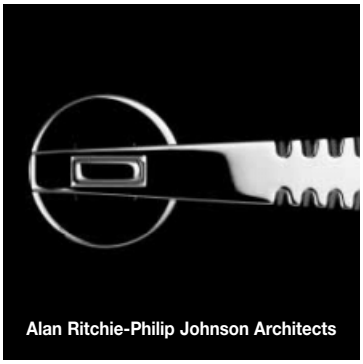


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# Record News

Highlights

p. 53 **Ellerbe sues HOK over firm defections**
p. 54 **AIA to investigate decline in new licenses**
p. 56 **Florida group fights against McMansions**
p. 66 **On the Boards: Vegas**

## Is Renzo Piano America's default architect?

American museums seem to be operating on a new architectural principle lately: If there's any doubt about the design of your new addition, hire Renzo Piano.

In the past year, the Italian architect has received expansion commissions from the Whitney Museum of American Art in New York City, the Los Angeles County Museum of Art (LACMA), and the Isabella Stewart Gardner Museum in Boston. Last year, he completed the graceful Nasher Sculpture Center in Dallas [RECORD, January 2004, page 100], and his firm, Renzo Piano Building Workshop, is now working on the Morgan Library expansion in New York City (opening next spring); the High Museum Expansion in Atlanta (a 177,000-square-foot project opening this fall); the glass, steel, and limestone Chicago Art Institute north wing addition; the California Academy of Sciences expansion in San Francisco; and (though it's in jeopardy) the expansion of Harvard's Fogg Art Museum in Cambridge, Massachusetts. He is also rumored to be the favorite to design a new space for the Barnes Foundation in Philadelphia.

"It seems he's the only game in town," says Ken Carbone, of Carbone Smolan Agency in New York, which advises on museum projects throughout the country, including Piano's work in Atlanta. Most museum leaders point out that Piano's exalted status in their community is well-deserved. Directors point to several factors, first among them design, in which Piano creates intimate spaces that elegantly highlight the art inside. A good example is the Menil Collection (1987) in Houston, an intimate glass-and-concrete box whose pristine interiors are flooded with rich layers of light. Such work seems especially popular as the tide begins slowly to shift against flashy "destination" museums that often overwhelm the work inside.

Another factor is that Piano, known for working well with museum officers and coming in on budget with popular designs, has become a sure thing in a field that is often without certainties. James Cuno, director of the Art Institute of Chicago, points out that museum after museum extols his work, charisma, and negotiating ability.

But some feel the choice of Piano is more about playing it safe with a familiar name. Carbone notes that some American architects are getting fed up with what could be called the "knee-jerk" choice of Piano (as well as the recent dominance of other foreign firms in the U.S. museum market, such as Herzog & de Meuron). "You'd like to think there's somebody else out there," he says, pointing to only a handful of American architects getting recent museum commissions, like Frank Gehry, FAIA, and Polshek Partnership. Richard Gluckman, who also submitted a design for the Whitney addition, claimed that the museum had promised him a chance to compete for the commission but changed its mind when Piano came into the picture.

While most admire his work, some architects wonder whether Piano's multitude of U.S. projects will begin to look formulaic, which he says will never happen. "The differences between my buildings are immense," he says, pointing to the LACMA project, which creates a new gardenway as a centerpiece, and the Whitney Museum, which opens up to the surrounding urban environment, as examples. "Some people like to make generalizations, but they're not looking closely enough," he adds. Piano also resents being regarded as a "safe choice." "Making museums that work for art, that are simple, subtle, serene, doesn't mean they are not ambitious buildings," he says.

As for his grip on the U.S. museum market, Piano notes his close work with local firms like Fox & Fowle and Beyer Blinder Belle, and says he has no ambition to monopolize projects. "We are actually very reluctant. We take very little of what is offered to us. I never try to do more than I can." *Sam Lubell*









**Piano completed the Nasher Sculpture Center in 2004 (top left). Upcoming projects include additions to the High Museum in Atlanta (top center, at rear), the Art Institute of Chicago (top right), and the Los Angeles County Museum of Art (left), which includes the removal of a parking garage and street to create a new park.**

IMAGES: © TIMOTHY HURSLEY (TOP LEFT); COURTESY HIGH MUSEUM OF ART (CENTER); COURTESY ART INSTITUTE OF CHICAGO (TOP RIGHT); COURTESY L.A. COUNTY MUSEUM OF ART (BOTTOM)

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## A partnership sours: Ellerbe sues HOK over firm defections

Minneapolis-based Ellerbe Becket says the defection of five key principals from its Kansas City sports architecture office to its rival HOK violated agreements the company had with its staff and with HOK, according to a lawsuit filed on March 16 in Missouri state court. The lawsuit asks a judge in Kansas City to impose damages and issue a court order stopping the five defectors from using confidential information or




**Both firms worked on the Kansas City Arena.**

interfering with Ellerbe's clients and employees. It also charges the five with breach of contract, interference with a contract, and breach of fiduciary responsibility.

HOK officials could not be reached for comment. Michael Katz, an attorney for Ellerbe, declined to comment while the matter was still in court. According to the lawsuit, St. Louis–based HOK first secretly negotiated with David J. Orlowski, the head of Ellerbe Becket's Kansas City office and chief of sports architecture. The other employees involved—Brad A. Clark, Michael R. Clay, Stephen F. Hotujac, and Michael W. Sabatini—were recruited shortly afterward, the lawsuit claims.

Last October, Ellerbe and HOK started work on the new Kansas City arena project [RECORD, November 2004, page 44], a collaboration that put the two staffs in close contact, claims Ellerbe. The two firms and "other firms involved in the project agreed that each firm would not employ or solicit to employ any employees from the other firms working on the project," the lawsuit states. Nothing was put into writing, however, and the lawsuit suggests the agreement was sealed with a handshake.

After allegedly negotiating with Orlowski, HOK's "raid" grew to include the other principals. Meanwhile, Ellerbe's Kansas City office suffered yet another setback when architect Ron Gans left on March 28 to join 360 Architecture, one of its joint-venture partners in a new Kansas City arena project.

"Ellerbe Becket has depth," says Stuart Smith, company spokesman. "The departure of Ron and the principals will open up new opportunities for promotion." Indeed, in mid-April, Ellerbe announced a slew of internal promotions to bridge the staff shortfall. *Richard Korman/ENR, with additional reporting by Tony Illia*

## Goldman halts construction on Lower Manhattan tower

Pei Cobb Freed's 40-story, $2 billion Lower Manhattan tower for investment banking firm Goldman Sachs appears to be in jeopardy. On April 4 the firm halted imminent construction on the project, located on the northwest corner of Vesey and West Streets, contending that it cannot move forward until some unresolved questions about surrounding development are answered.

The prime question, says Goldman Sachs spokesperson Peter Rose, is the location of a planned vehicular tunnel—a result of submerging West Street—that now appears to head under the building's main entrance. The location, says Rose, would be dangerous and inconvenient for pedestrians, and would take away from the building's visual impact. Other issues include questions about the Freedom Tower's design and the configuration of the World Trade Center site as a whole.

The site of the firm's glass tower, which will consolidate its many area offices and provide larger trading spaces, is the last vacant commercial parcel in Battery Park City, set to be located just west of the Freedom Tower. Joanna Rose of the Lower Manhattan Development Corporation says, "We're working hard to address those concerns, and we're confident we will be able to resolve them." *S.L.*

### Jets begin moving forward with new stadium

**The Metropolitan Transporation Authority on March 31 approved the $720 million sale of its West Side rail yards in New York City to the New York Jets, clearing the first of many hurdles in the team's effort to build its $1.9 billion, 75,000-seat stadium on the site. On April 11, the Empire State Development Corporation, a New York State Agency, also authorized the transaction. *S.L.***

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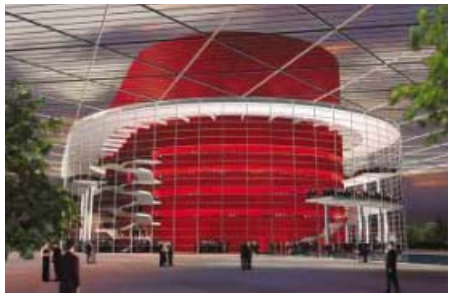
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# Record News





## Chill between Koolhaas and Foster could hurt Dallas project

What was conceived as a dream marriage is starting to look like an episode from *Divorce Court*.

In 2001, the Dallas Center for the Performing Arts commissioned Rem Koolhaas's Office for Metropolitan Architecture and Foster and Partners to design its new multiform theater (left) and opera house (right). Center officials touted the collaboration as a provocative union of techno sleekness and messy vitality, and the firms also agreed to work together on a master plan for the public spaces between their buildings. Skeptics pointed out that Foster and Koolhaas didn't care for one another's work, or one another, and that a fruitful collaboration was probably a long shot. It looks like the skeptics may have been right.

Although fund-raising is marching along and both buildings are in design, architects for the two firms rarely turn up in Dallas at the same time, preferring to communicate by e-mail, conference calls, and intermediaries. The situation is frustrating arts-center officials, who complain privately about poor coordination and "once-a-month access" to the decision makers. "We'd all be much happier if the two firms were comfortable sitting in the same room together," says one participant.

OMA's theater is in design development, an 11-story aluminum-skinned cube with a 600-seat performance space at street level and offices, rehearsal rooms, and a café stacked above. The opera house—a glowing red ellipse wrapped in shimmering glass—is further behind, in part because of uncertainty about the size and cost of an exterior sunscreen, which has fluctuated from a restrained eyebrow to a sprawling, freestanding structure covering roughly 4 acres. Further languishing are the streets, plazas, parks, and other public spaces that will connect the cultural monuments. Koolhaas and Foster had lobbied for control over the master-planning process, only to virtually ignore it thus far. After two years, there is still no site plan, and landscape architect Michel Desvigne has presented only a few renderings. The Performing Arts Center is scheduled to open in 2009. *David Dillon*

## Proposed resolution would address decline in new licenses

**A resolution will be presented at the American Institute of Architects (AIA) National Convention in Las Vegas (May 19–21) that will attempt to address the issue of the decreasing number of people obtaining licenses to practice architecture, and the dearth of data available on the topic.**

**The number of initial licenses issued nationally was 2,820 in 2002 and 2,470 in 2003, according to the National Council of Architectural Registration Boards (NCARB). The resolution also notes that little state registration data has been made publicly available. Resolution 05-1, sponsored by the AIA California Council, the Boston Society of Architects, and AIA Massachusetts, calls for the AIA and NCARB to work with individual state boards to conduct a survey of newly licensed architects over the past 10 years, to be updated annually. It also calls for the AIA to assess the impact of the decline in the number of newly licensed architects on the profession and on the AIA.**

**The resolution is, in part, a response to a problem that is especially acute in California, where the number of newly licensed architects declined rapidly in the 1990s, from 1,339 in 1989 to 398 in 2004. John Cary, a member of the AIA California Council board of directors, is presenting the resolution. "This resolution is first and foremost about raising awareness of this potentially fatal trend," Cary says. "Whether the convention delegates pass the actual resolution or not, they will be sending a very clear message about how much the AIA truly values registration." *John E. Czarnecki, Assoc. AIA***

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## Pritzker and AIA Gold Medal winner Kenzo Tange dies at 91

On March 22, Japanese architect Kenzo Tange died at age 91. The prolific designer, known for engineering skill and inventive use of materials and forms, will be remembered for his accomplishments both as an educator and as an architect.

Born in Osaka in 1913, Tange studied architecture at the University of Tokyo. He established himself as a field leader with the 1955 completion of the Hiroshima Peace Center, a Modernist masterpiece that memorialized the city's 1945 decimation. Tange's swirling concrete stadium for the 1964 Tokyo Olympics, an engineering marvel, became a symbol of Japan's postwar prosperity. In 1990, Tokyo City Hall, a 48-story pair of towers, became an instant landmark in a city where individual buildings rarely stand out.

Tange received the AIA Gold Medal in 1966, the Pritzker Prize in 1987, and Japan's Praemium Imperiale in 1993. In 1963, he returned as a professor to his alma mater, where his students included Arata Isozaki and Fumihiko Maki. Maki notes: "I think Tange was one of few architects able to create sublime space through the spirit and technology of Modern architecture." *Naomi Pollock*



**Tange's St. Mary's Steel Cathedral in Tokyo is stainless steel, with thin limestone-framed windows.**

## Florida group commissions alternative to "McMansions"

Fed up with the spread of huge, formulaic "McMansions," a Florida group called NAMBIES United (Neighbors Against McMansions: Big Invasive Eyesores) recently juried a competition for a house design that could potentially help replace the behemoth residences going up in their Coconut Grove, Florida, neighborhood. While Coconut Grove isn't known for McMansions, the area's popularity is luring more residents, and developers are beginning to knock down smaller houses, replacing them with lot-dominating ones.



**Mateu's design takes advantage of the local climate.**

The competition drew 53 entries, and on March 1, local architect Roney Mateu was named the winner for his sleek, white home wrapped around a courtyard. Mateu's 4,500-square-foot, two-level, L-shaped house includes balconies, extremely large windows, long vistas, and a pool with a significant grassy area, all maximizing, says the architect, the area's surrounding environment.

"I believe that people see value not just in square-footage, but in totality of use," says Mateu. "You're outside enjoying the vistas, where the others are in a giant box watching TV."

The 16 organizers/investors now plan to build the new house and sell it on the market. They hope the design will become a model for replacing the now-familiar practice of filling development parcels with huge houses in order to create maximum profit (since land is a fixed cost, the larger the house, the less the price per square foot). "A lot of architects are sick of building these cookie-cutter houses," says NAMBIES United spokesman Andy Parrish. Mateu adds, "I think we are going to see more people demanding this. People will realize they don't really need all this space. Often it's just wasted."

Ironically, NAMBIES United had chosen a 3,000-square-foot design by architect George F. Reed late last year, but later decided his project was too small and involved costly custom woodwork, hence it wouldn't make enough profit.

"We bumped up against the hard realities of building in today's market," says Parrish. "A smaller design doesn't leave you much room for profit."

Mateu's house, which he calls the Casa Onaway (for the street it sits on) is now moving forward, with construction drawings completed, construction set to begin in late May, and completion expected six to nine months later. *S.L.*

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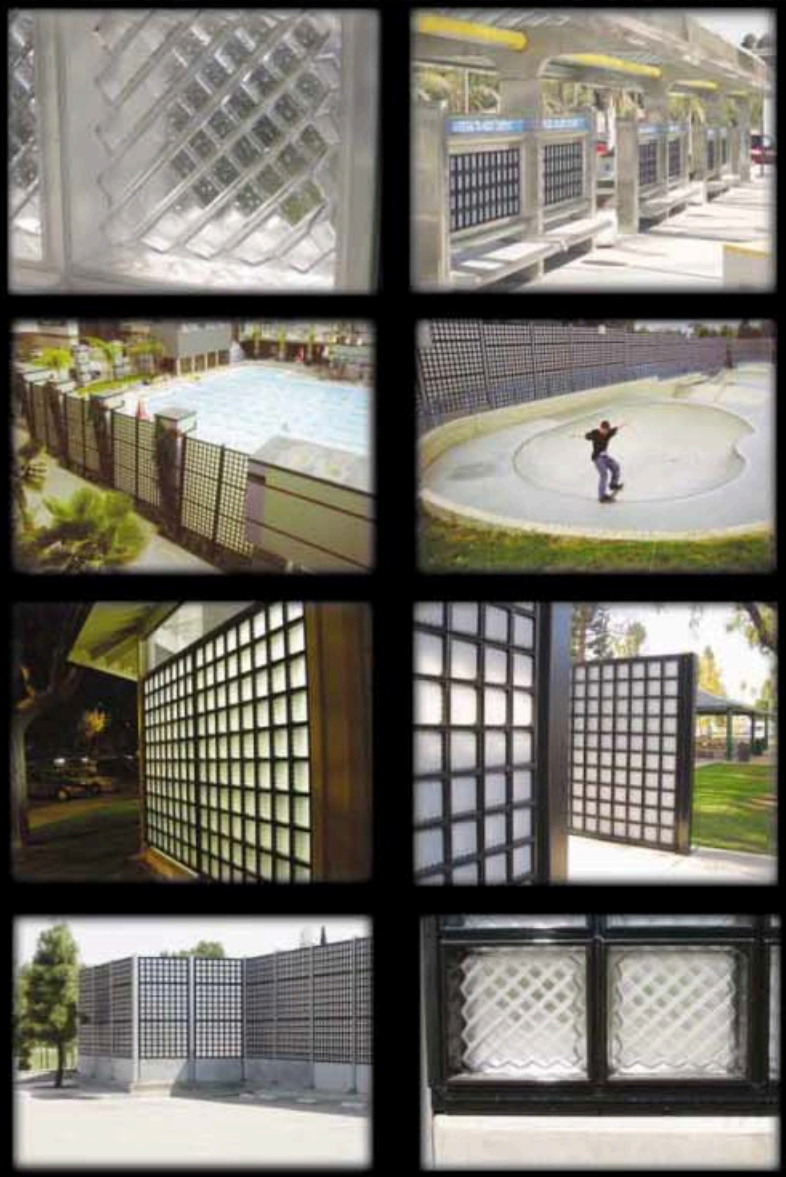


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## New program to encourage more pro bono work in architecture

For years, the legal and medical professions have offered pro bono resources to the less fortunate. The American Bar Association, for instance, encourages lawyers to each contribute 50 hours a year in free legal counsel and other support. Many firms even have their own pro bono managers.

But while many architects and their firms have been involved with similar efforts, the architecture profession as a whole has mostly stood on the sidelines. Until now.

On March 31, Public Architecture, a nonprofit hosted by San Francisco–based Peterson Architects, launched the "1% Solution," which challenges architecture firms to pledge 1 percent of their billable hours to the public through pro bono work. This works out to about 20 hours a year per employee, and could collectively add up to more than 5 million hours annually, the group says. Pro bono help can include just about anything: design of churches, schools, and parks, and even graphic design support or general consulting.

The fact that architecture has no such organized program at this point was "stunning" to John Cary, executive director of Public Architecture. The new project grew out of his organization's conversations with architects. Cary adds that it focuses on firms rather than individuals, recognizing that firm policies are the key to getting employees involved.

"It's not a solo pursuit," he says, adding that the effort will also help improve firm culture and give younger architects the chance to hone their skills as project leaders and hands-on workers.

A grant from the National Endowment for the Arts has helped Public Architecture launch a Web site for the 1% Solution, www.theonepercent.org, recognizing firms' participation in the program (including school library projects for the Robin Hood Foundation by Tod Williams Billie Tsien with Weiss/Manfredi; the Skyscraper Museum by SOM; and a multifamily residential project in Seattle by Olsen Sundburg Kundig Allen) and providing information and guidance. In the future, the organization hopes to receive support from groups like the AIA and plans to provide case studies of successful pro bono work.

Since launching, the program has enlisted about 35 firms, with about 6,245 hours pledged. The largest firm to commit so far, Glendale, California–based Osborne, has 55 employees, but some larger firms are close to committing, says Cary. Nevertheless, he's a realist, noting that most architecture firms don't have the money to pledge as many resources to pro bono work as more lucrative professions like the law.

"That's why we have a 1 percent solution and law has a 2.5 percent solution," he says. *S.L.*




**The program's Web site, www.theonepercent.org (left), tallies total hours pledged, and features pro bono project designers like Weiss/Manfredi and Tod Williams Billie Tsien.**

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## New York's High Line reveals first look at its new plans





**Walkways will blend organic and man-made materials.**

The first phase of design has been unveiled for Manhattan's High Line, the 1.5-mile elevated railway destined to become New York's unique new public space.

Hashed out over the past six months by Field Operations and Diller Scofidio + Renfro, the designs were made public on April 20, and are on display at New York's Museum of Modern Art until July 18.

Phase I, which centers on the park's southernmost stretch, from Gansevoort to 15th Street, lays down a framework for the entire project: "Agri-tecture," the blending of organic and man-made materials enjoining a varied system of planked pathways with a diverse array of plant life.

"People will continuously meander through the landscape," explains Field Operations' James Corner. "It allows us to create niches and little hideaways." The planks, made of precast concrete, will have gaps between them where they intersect with green areas, allowing spaces for flora to grow. This will create, says Corner, a "blending between the hard and soft materials—a landscape that isn't a simple division between path and garden."

The concrete paths, 8 to 15 feet wide, will be laid out in a winding flow with numerous splintering tributaries. The plant species chosen for the site should be "able to maintain their shape in all seasons," observes Friends of the High Line (FHL) planning director Peter Mullan, in order to make a continuous visual impression.

Another important feature, says FHL codirector Joshua David, will be the varied points of access onto the High Line. Several entrances will stem from busy intersections, while "slow stairs" will "psychologically divide the street from the structure," Mullan adds. The FHL hopes to begin repairs and remediation of the structure by the fall of this year, with Phases I and II of construction to follow in mid-2006. *Ilan Kayatsky*

## Replacing a highway with homes



**San Francisco is hoping to exorcise the demons of past urban-planning mistakes with a housing design competition for the site of the former Central Freeway (top right), damaged during the 1989 Loma Prieta earthquake. The competition seeks ideas for nearly 1,000 new housing units on six parcels fronting Octavia Boulevard, a new tree-lined street under construction in the Hayes Valley neighborhood (bottom right) near the city's Civic Center. Two of the parcels will be developed as affordable housing; the remaining four will be sold to developers, who will be encouraged to partner with the winning designers.**

**The competition, sponsored by the San Francisco Prize—a collaboration between the AIA San Francisco chapter, the San Francisco Planning and Urban Research Association, the San Francisco Museum of Modern Art, and San Francisco Beautiful, a civic organization—also hopes to heighten the design ambitions of the city's infill housing projects, which are often limited by conservative aesthetics. Impetus came from the neighborhood itself and was encouraged by a $55,000 grant from the city. This combination of government and local support makes this competition "more than just a hypothetical exercise," says Margie O'Driscoll, executive director of AIA San Francisco, noting, "It's amazing that the neighbors came to us." *Andrew Blum***

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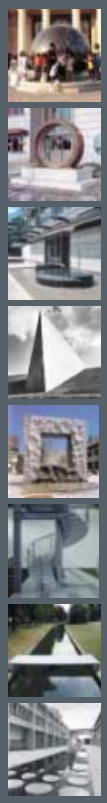
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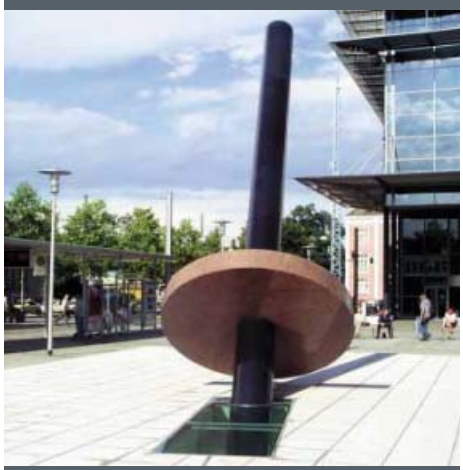
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## Conference examines architecture's threat to birds

By some estimates, collisions with buildings, bridges, towers, and other man-made structures claim as many as a billion birds annually in the U.S. alone. In mid-March, architects, building managers, public officials, conservationists, and ornithologists met in Chicago to discuss the huge toll the built environment exacts on the bird population.

Touted as the first conference devoted to the topic, "Birds & Buildings: Creating a Safer Environment" was hosted by the Illinois Institute of Technology. The conference provided a primer on bird behavior, highlighted "best practices" in design and operations, and fostered networking and brainstorming. Cosponsors included the Bird Conservation Network, the Audubon Society, AIA Chicago, and BuildingGreen.



**Lighting rules in Chicago mitigate the Sears Tower's threat to fowl.**

Many birds migrate at night and are easily thrown off course (and into buildings) by artificial lights. Chicago, Toronto, and other flyway cities promote migration season "lights-out" programs, which have proved effective and cost-saving.

The major daytime killers are transparent and reflective surfaces. "The evidence is overwhelming that birds act as if they do not see clear and reflective glass as a barrier," says Daniel Klem, an ornithologist at Muhlenberg College, in Allentown, Pennsylvania.

Measures discussed at the conference, like sunshades, drapes, or artwork, can provide visual cues, as does netting. Thermal coatings and fritted glass can also prevent bird collisions while cutting energy use.

Clients tend to be unaware of the problem, says Bruce Fowle, FAIA, principal at Fox & Fowle Architects in New York, "unless they happen to own a building where there is a severe problem with bird collisions."

Science may hold the answer, according to Fowle. "The ultimate solution is to develop a cost-effective, nonreflective glass with a wavelength, such as ultraviolet, that birds can see and we can't," he says.

Addressing this issue along with other environmentally sensitive design approaches can be a challenge, since the dictates of historic preservation and green building don't always align with bird-safe design, says conference organizer Randi Doeker, president of the Chicago Ornithological Society. "It's probably a little easier to work out, because nobody wants dead birds in front of their buildings," she says. "And like all of these things, the sooner you do it, the easier it is." *Ted Bowen*

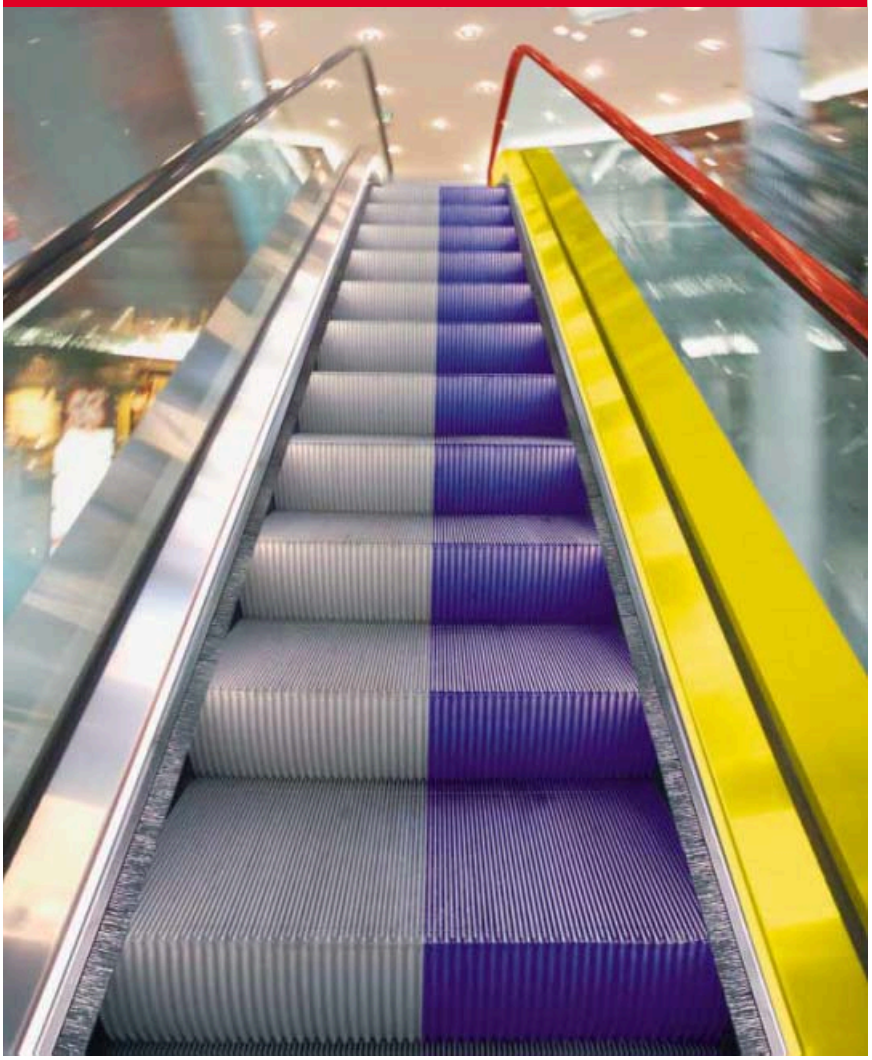
## Grimshaw takes Queens Museum commission

**Nicholas Grimshaw has replaced Eric Owen Moss to renovate the Queens Museum, the historic former New York pavilion in the 1939 and 1964 World's Fairs in New York City's Flushing Meadows-Corona Park. Moss, who was dismissed after producing two redesigns of his original scheme, was the December 2001 winner of the first national design competition held by the New York City Department of Design and Construction (DDC). Grimshaw, in collaboration with local firm Amman & Whitney, was selected from a group of architects, including Fox & Fowle and SOM, who have standing contracts with New York City under the DDC's Design Excellence Program. Says Tom Finkelpearl, executive director of the museum since 2002, "We've been through a process of self-examination as an institution. We're not looking for an instant design at the beginning, but someone we're comfortable with in the process." Andrew Whalley, director of Grimshaw's New York office, notes, "The museum's objectives are different from their earlier work; the emphasis now has very much to do with the existing integrity that the building has. It's a robust structure that's stood the test of time." The museum plans, as before, to begin construction in 2007 and reopen in 2009. Finkelpearl adds, "We're not starting from zero." *Thomas de Monchaux***

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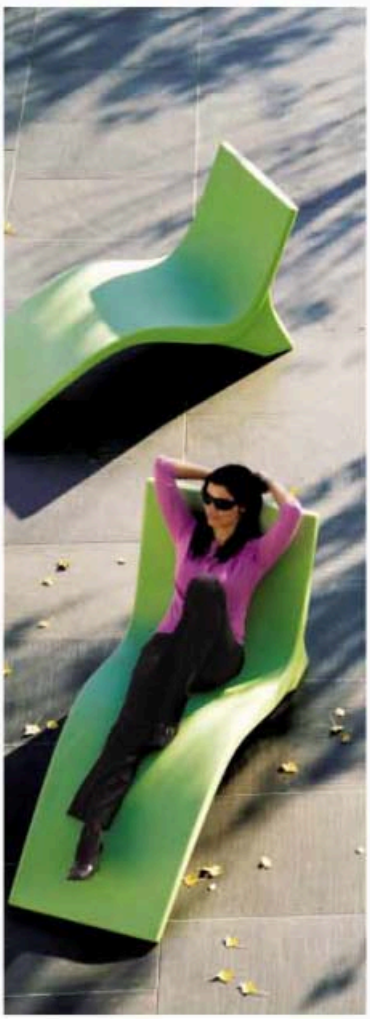
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## UCSF's Mission Bay campus attracts long list of architects

Architects who come to San Francisco with ambitions beyond bay windows tend to get discouraged. But that doesn't appear to be the case at the new Mission Bay campus of the University of California, San Francisco, now rising on 43 acres of landfill and former rail yards just south of the city's downtown.

The campus has an ambitious design agenda, stemming from the need to attract faculty away from the main UCSF campus across the city, as well as the University of California's sense of civic obligation. The result—just now taking visible shape—is part architectural petting zoo, part reimagining of what an urban university campus can be.

At full build-out, expected around 2020, the Mission Bay campus will include 2.65 million square feet of space, constructed at a cost of $1.5 billion, accommodating nearly 10,000 people working and studying in the sciences. The campus anchors the larger redevelopment of the 303-acre Mission Bay area into a mixed-use neighborhood, mostly targeted at the biotech industry. On the UCSF campus, a striking list of architects is at work, including Cesar Pelli, FAIA, Ricardo Legorreta, Bohlin Cywinski Jackson, Rafael Viñoly, FAIA, Peter Walker, STUDIOS, Stanley Saitowitz, EDAW, NBBJ, Smith Group, and Skidmore, Owings & Merrill. Each is following a master plan developed by Machado and Silvetti.

These days, the Mission Bay campus still looks like a downtown in Iowa, with bulky buildings dropped into a flat, open expanse. Genentech Hall, the first major academic research building, designed by ZGF and Smith Group, opened in January 2003; it was followed a year later by another lab building, Arthur and Toni Rock Hall, designed by Cesar Pelli. Both began to enliven the campus—and, crucially, increase its popularity among the initially wary transplants from the main UCSF campus—while major construction continued. This summer, the pace increases with the opening of four major buildings. The $85 million, 165,000-square-foot community center designed by Ricardo Legorreta, serves as the focal point of the quad, with candy-colored walls and a symbolic campanile. Craig Hartman, FAIA, of the San Francisco office of SOM, has designed a $112 million residence, with four narrow slabs surrounding a central courtyard. Bohlin Cywinski Jackson's $97 million, 152,000-square-foot research building adjoins Genentech Hall. And Stanley Saitowitz's $23 million parking structure leverages its central location to be a campus icon, with a channel-glass facade that resembles a DNA barcode. The buildings surround a pair of public spaces designed by Peter Walker and Partners, including a large grass quad and a paved plaza lined by retail, with a towering Richard Serra sculpture at its center.

Steve Wiesenthal, associate vice chancellor of facilities management and major projects at UCSF, Mission Bay explains that the diversity of campus architecture is meant to reflect how scientists and students come together, with "a loose framework, but a variety of perspectives and backgrounds." Accordingly, Machado and Silvetti's campus plan dictates a consistent cornice height of 85 feet and emphasizes pedestrian connections between buildings and between the campus and the surrounding area, which currently consists mainly of vacant lots. But within that plan, each architect's unique expression has been encouraged. "The big question, adds Wiesenthal, is "how do we achieve a sense of individual identity for people, programs, and buildings within an overall unity?"





**Pelli's Arthur and Toni Rock Hall (above). Walker's greenspace plans for the area (left).**

For San Francisco, the opening of the new buildings marks the next step in the long-awaited development of Mission Bay. "It's a whole new reality that the center of the city is moving south—which is a good thing, because downtown is largely built-out," says Jim Chappell, president of the San Francisco Planning and Urban Research Group. "I just wish the development were more urban. It has the feel of an office park, not a city street." *Andrew Blum*

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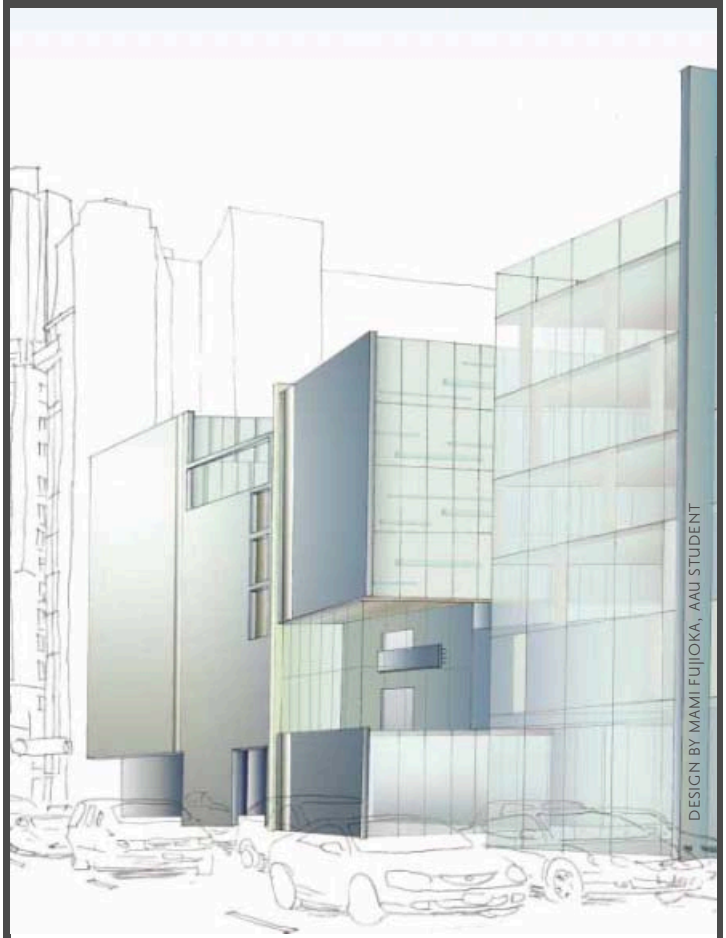
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## Pelli's hotel-casino on Las Vegas strip will be centerpiece of massive development

The Las Vegas Strip is getting a sleek new architectural addition from Cesar Pelli & Associates, which is designing a 4,000-room hotel-casino (right) that will serve as the centerpiece of MGM Mirage's $6 billion Project CityCenter development (see page 196).



Early plans call for two 60-story glass towers with panoramic views of the Strip. The nonthemed resort will also house a 150,000-square-foot casino, 15 to 20 restaurants, and a 2,000-seat theater for a Cirque du Soleil production. MGM Mirage executives expect the project cost to reach $2.5 billion.

Pelli's project will anchor the 8-million-square-foot Project CityCenter, launched in November. Situated on 66 acres, between the Bellagio and Monte Carlo resorts, the development will include three 400-room hotels, 550,000 square feet of shops, dining, and entertainment venues, and 1,650 units of hotel-condominiums and private residences. Ehrenkrantz Eckstut & Kuhn Architects is the master-plan designer. The pedestrian-oriented environment, with public squares, covered passageways, and rooftop gardens, is scheduled to break ground next year, and finish its first stage by 2010. *Tony Illia*

## Behnisch's "Senscity" project will provide a lush complex in the desert

A new urban oasis may soon come to the Las Vegas desert. Stuttgart-based Behnisch, Behnisch & Partner is designing a 150-acre, mixed-use park that combines toy galleries and entertainment venues with landscaped gardens and children's playgrounds.



The project, dubbed "Senscity Paradise Universe," will be a sustainable, energy-efficient environment consisting of terraced green areas, an artificial lake, and meandering paths. The site will also include family-oriented restaurants, theaters, and auditoriums. Natural barriers will separate the lush development from its dry surroundings.

Giant flowerlike structures (left) measuring up to 120 feet tall and 300 feet wide, will line the park paths, providing shade and cool-air relief. The structures will be built from prefabricated lightweight metal frames and posttensioned fabric. Evaporating water on their leaves will cool the park's air while creating downdraft airflows. The leaves can additionally be used as energy collectors, transforming radiation into electricity or heat during winter months. The project's development consortium is still finalizing the project's site, and the plan has received preliminary approval from Clark County, says Behnisch principal Christof Jantzen, AIA. Construction is expected to take three years. *T.I.*

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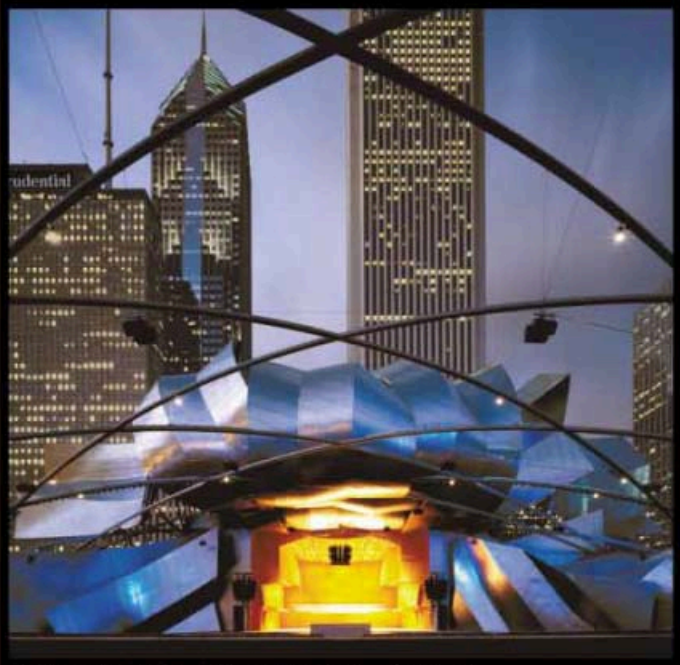
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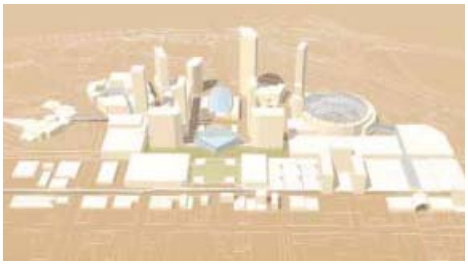
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## Plan envisions new Vegas center, away from the Strip

Downtown Las Vegas is expanding, becoming a dense urban core brimming with amenities and architecture, steering the image of the city away from the glitzy casinos that line the Strip.

In 2004, city officials selected The Related Companies to develop 61 acres once operated by the Union Pacific Railroad, about 5 miles northeast of the Strip. Boston-based Elkus Manfredi Architects designed the master plan, which calls for a new city hall, performing arts center, baseball stadium, 8.7-acre medical campus, and residential, retail, and office space.

The performing arts center abuts the city hall's adjacent park, creating a strong central axis. Office buildings ring the central plaza, and 3,000 housing units fill out the urban plan. Parking will be hidden from view by placing garages behind buildings and major lots at the edge of downtown. Visitors will be encouraged to stroll the sidewalks, stop to eat at restaurants, and browse the shops. Taking advantage of the climate, extensive landscaping will enhance the outdoor experience.

According to Marty Burger of The Related Companies, the city hopes to complete the development in 2008, when, says Howard Elkus of Elkus Manfredi, "it will become the new iconic heart of downtown Las Vegas." *Larissa Babij*

## Arquitectonica designing two new projects on Las Vegas Strip



New York developer Ian Bruce Eichner recently unveiled plans for a new $1.5-billion, mixed-use hotel-casino-condominium project designed by Miami-based Arquitectonica on the Las Vegas Strip. Situated on 8.5 acres adjacent to the Bellagio, the "Cosmopolitan Resort & Casino" is scheduled to break ground in early 2005.

The 4-million-square-foot undertaking will consist of two 53-story aquamarine glass towers housing 2,400 time-share, condominium, and hotel units, ranging from 600 to 900 square feet in size. Paul Duesing Partners is the interior designer. There will also be a 70,000-square-foot casino, a 1,800-seat theater, and a 150,000-square-foot convention and meeting-room area.

The new development's twin, 600-foot-tall perpendicular buildings will be connected by a five-story low-rise with 300,000 square feet of space for retail shops, restaurants, and entertainment. The Cosmopolitan will be a "hip, boutique property," says Eichner, who also developed New York's Manhattan Club at 200 West 56th Street. The new project will have 400 feet of Strip frontage and a four-level, 3,000-space underground parking garage. It is scheduled to open by early 2008. *T.I.*

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## nextBOX challenges idea of "custom homes"

Las Vegas–based assemblageSTUDIO has designed nextBOX, a residential project in Henderson, Nevada, just outside of Las Vegas. Planned for a gated community where Spanish-style houses are the norm, the proposal challenges the developer's desire for "true custom homes."

The proposed 3,500-square-foot residence comprises two masses. The larger one is a "great room" containing a living area and theater. The second includes two bedrooms and wraps up above the first, creating a "loftlike condition" as the bedrooms look into the great room. The exterior will be clad in charcoal zinc paneling, bent in places to create an organic shadow effect on the house.

The home was originally slated for construction this August or September. However, the owner has filed a court appeal against the developer, who has denied the design, despite the fact that it meets all of the developer's guidelines.

"We feel it really comes down to matter of taste," says design architect Eric Strain. He adds, "The residential market for custom single-family homes hasn't really matured to the point where people want to create homes about who they are and how they really live." *Audrey Beaton*

## Vegas to convert old water springs site into nature preserve park

Las Vegas, which means "meadows" in Spanish, is transforming a neglected water springs site, about 2 miles northwest of the Strip, into a nature preserve park. The 180-acre area is considered the city's birthplace, having provided the valley with water. After the springs dried up, however, the area fell into disrepair and faced being paved over as a freeway. Archaeological discoveries ultimately rescued the site, and local leaders have since launched a $200 million effort to restore the area, creating an urban central park with low-water desert gardens, sustainable demonstration buildings, recreation trails, and a wetlands area.



**The preserve's Visitors Center's interior.**

Locally based Lucchesi, Galati Architects is designing a five-building, 54,000-square-foot Desert Living Center on the site to be built from earth-rammed walls and straw-bail construction, with angled roofs that collect rainwater for irrigation and wastewater management. Tate Snyder Kimsey Architects of Henderson is designing a two-building, 75,000-square-foot Visitors Center that uses weathered steel siding, lime-based plaster, and recycled glass. The project, overseen by the Las Vegas Valley Water Authority, is scheduled to open in late 2006, and seeks the highest possible LEED ratings. *T.I.*

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# News Briefs

**Morphosis dropped from Grand Avenue project** The developer The Related Companies has decided to drop Morphosis from its $1.2 billion Grand Avenue project. The housing and retail development, announced last year, is estimated to include about 3.2 million square feet in a key cultural and civic area of downtown Los Angeles. According to Bill Witte, principal at The Related Companies of California, Morphosis, the Santa Monica design firm led by 2005 Pritzker Prize winner Thom Mayne, has a "different design vocabulary than what the Related team is trying to do with the project." Witte says other options include Frank Gehry. Phone calls to Gehry's office were not returned. *A.M.*

**British poll gives architects low happiness ratings** The 2005 "Happiness Index" compiled by City & Guilds, a U.K.-based group established in 1878 to encourage education and training in and for the workplace, has revealed some surprising statistics. Only 2 percent of architects enjoy their jobs, just 1 percent below civil servants, while hairdressers top the happiness league, with 40 percent claiming to be extremely happy in their work. Hot off the heels of hairdressers are chefs (23 percent), beauticians (22 percent) and plumbers (20 percent). *Lucy Bullivant*

**Deal saves much of Plaza Hotel** New York's Plaza Hotel has set an accord to save 348 of its 805 rooms, as well as its Grand Ballroom, Palm Court, and Oak Bar. The future of these spaces had been in jeopardy when the Plaza's new owner, Elad Properties, had originally planned to save only 150 rooms, converting the rest to condos. *S.L.*

**Blanton Museum to open in 2006** The Blanton Museum of Art at the University of Texas at Austin has announced plans to open its new, two-building complex beginning in February 2006. The museum, designed with a traditionally inspired exterior by Kallman McKinnell & Wood Architects, will include a main gallery, a visitor pavilion and education facility, and a public plaza and gallery. *S.L.*



**A rendering of Blanton Museum gallery.**

IMAGES: COURTESY BLANTON MUSEUM (LEFT); NATIONAL TRUST FOR HISTORIC PRESERVATION (RIGHT)

**Mudslides damage Frank Lloyd Wright's Ennis-Brown House** Restoration of Frank Lloyd Wright's Ennis-Brown House suffered a recent setback when mudslides damaged the 1924 Mayan-inspired structure. The concrete-block home, perched in the Hollywood Hills, was donated by its owners, Mabel and Charles Ennis, to the Trust for Preservation of Cultural Heritage in 1980. The trust has been working to return the home to its original grandeur, but the 1994 Northridge earthquake caused extensive structural damage to it, and torrential rains in late February resulted in mudslides, which caused its retaining walls to partially crumble. While the trust has received a $2.3 million federal grant for the work, repairs are estimated ultimately to cost a total of $4.1 million. The famed home has been closed since December of last year for renovation and is not expected to reopen until late this summer. The structural engineering firm of Melvin Green & Associates is overseeing the repair. *T.I.*



**Damaged Ennis-Brown House.**


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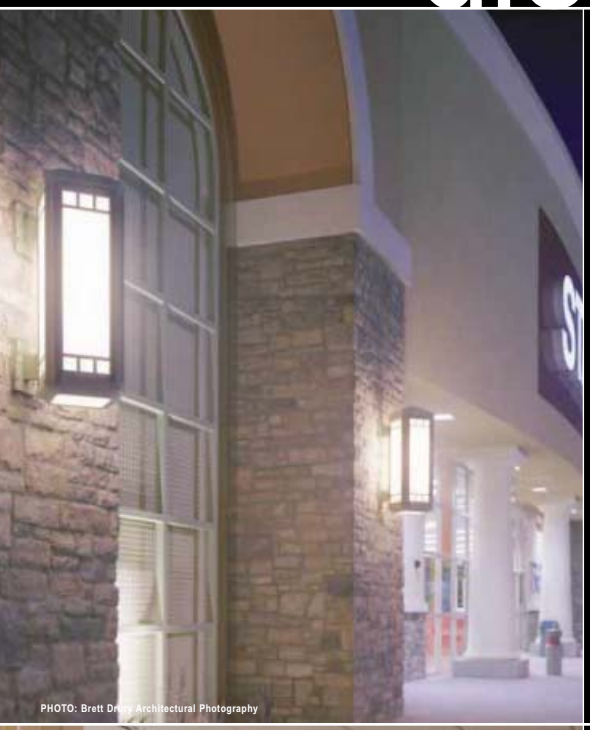
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# News Briefs

**OMA's Dutch Embassy in Berlin wins E.U.'s Mies van der Rohe Prize** OMA has received the Mies van der Rohe Award 2005—the European Union's Prize for Contemporary Architecture—for its design of the Dutch Embassy in Berlin. The award is presented every two years by the European Union and the Fundació Mies van der Rohe, Barcelona, to acknowledge high-quality architecture in Europe. The jury, chaired by Zaha Hadid, felt that the building was a powerful reworking of the notion of an embassy, and noted that an exceptional element was the spiral staircase with views framing the city. A sophisticated use of materials and visual effects revealing its context were also mentioned. *L.B.*

**Libeskind to design unusual residential tower in Kentucky**

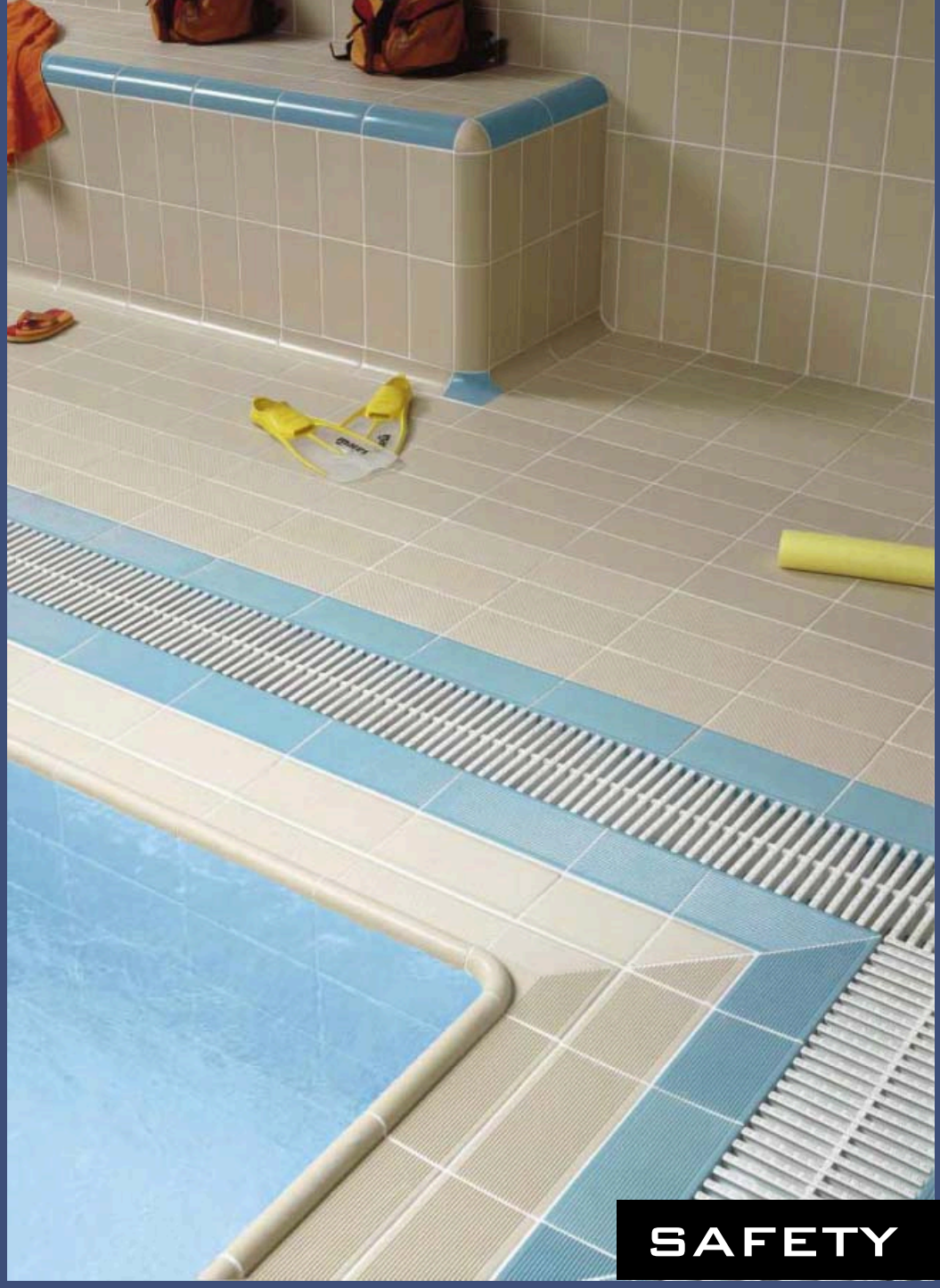

**The Ascent's unusual crescent shape.**

Covington, Kentucky's waterfront will be radically altered by a crescent-shaped high-rise designed by Daniel Libeskind. The 21-story curved-glass residential tower, located along the Ohio River, will have 80 condominium units, plus retail space and an urban plaza. Called The Ascent, it is situated on 1 acre near John Roebling's famous 1866 suspension bridge connecting Ohio and Kentucky. The building's sweeping lines mimic the bridge. "This building, while Modern in design, is based on shapes that reflect the history and landscape of Greater Cincinnati," said Libeskind in a statement. "Yet [it] calls to mind the possibilities that lay ahead." The $40 million project, developed by Corporex, is scheduled to break ground this summer and should be completed by 2007. *T.I.*

**ENDNOTES**

- The California Building Standards Commission voted to rescind an earlier state decision to adopt the NFPA 5000 Building Code. Instead, it will employ the NAHB-supported codes published by the International Code Commission, used extensively throughout the country.
- Construction is under way on Renzo Piano's New York Times Building in Manhattan.
- Rick Buckley, FAIA, a partner at NBBJ, died on January 1 at age 51.
- Architects Paul Byard and John Pinto have been awarded 2005 Guggenheim fellowships.

IMAGE: COURTESY CORPOREX











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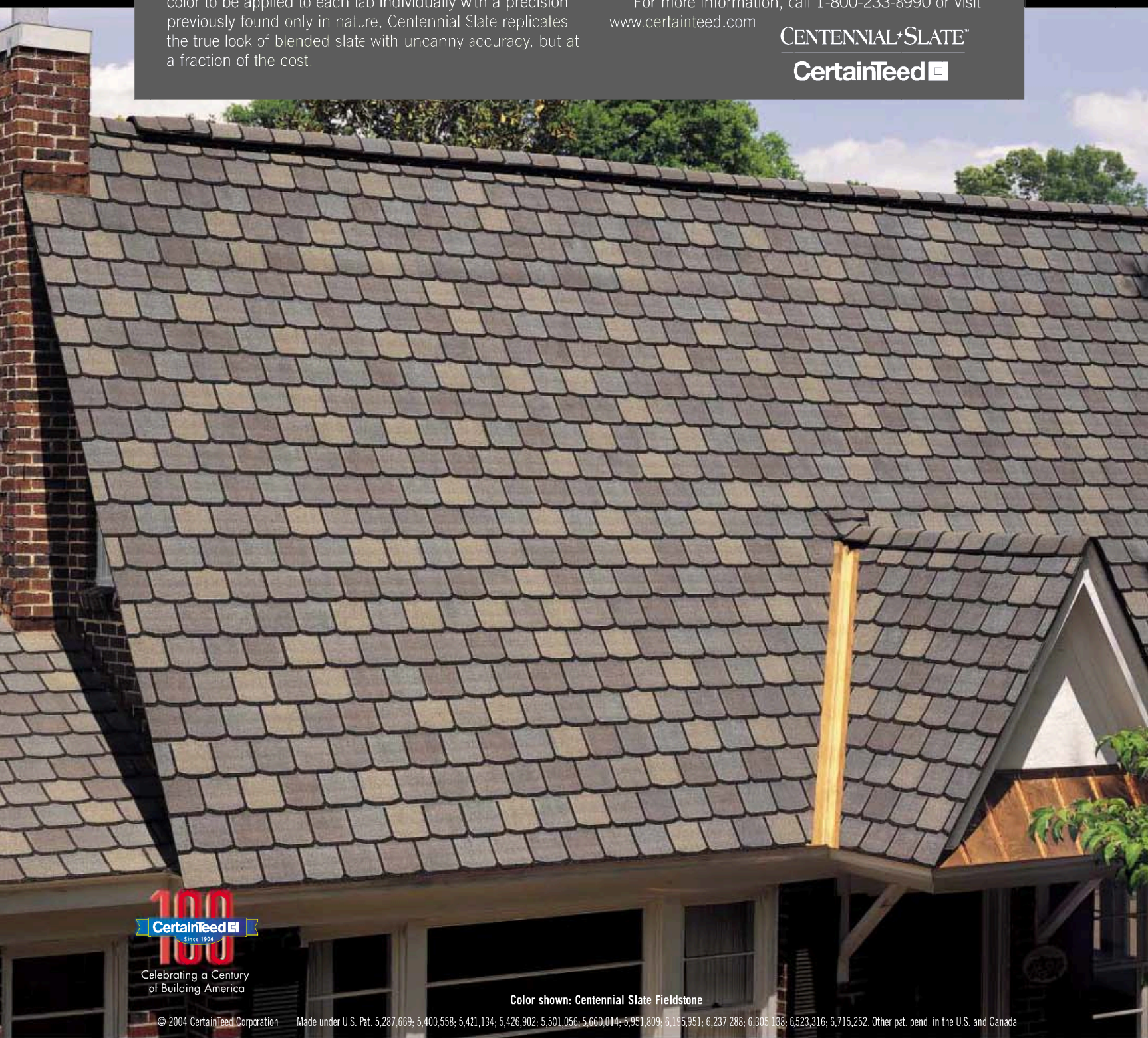
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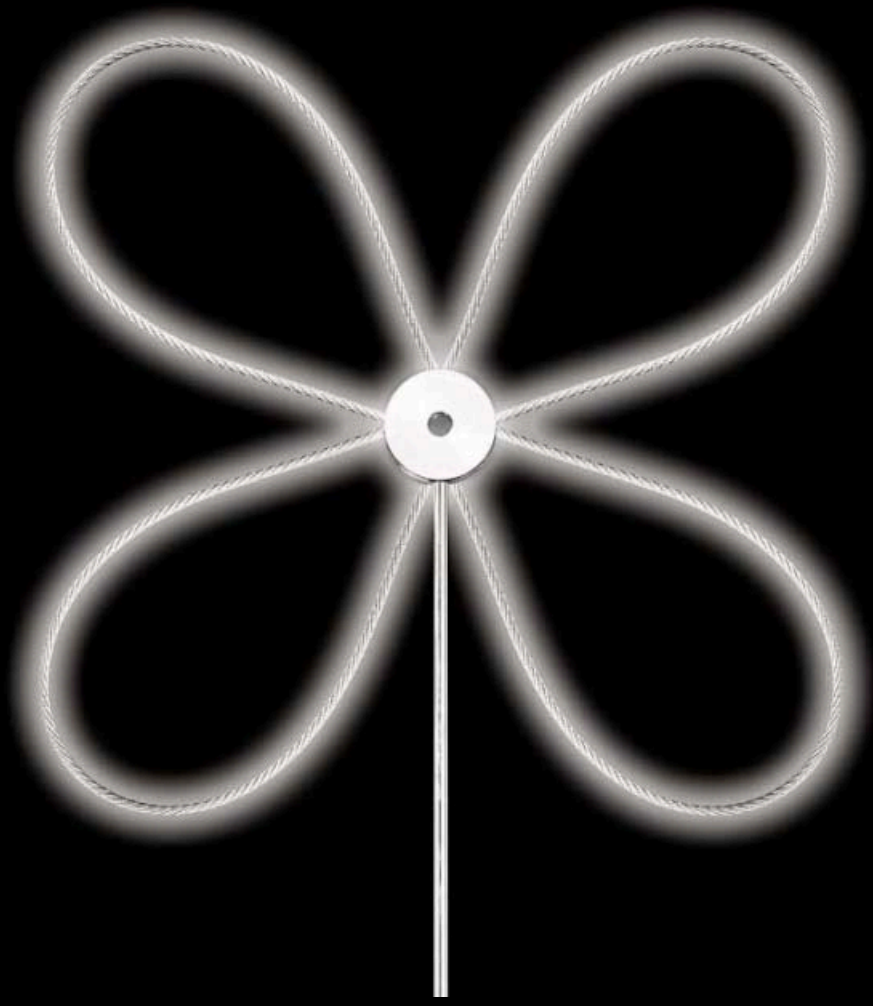
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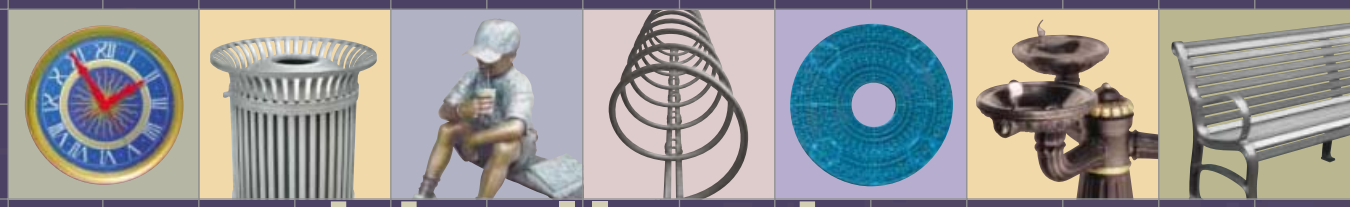
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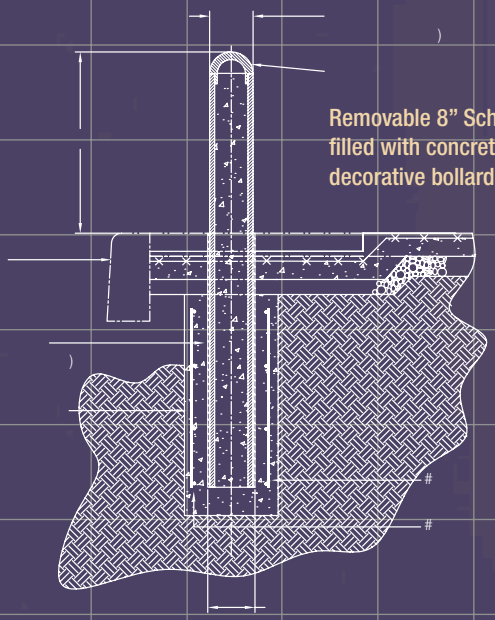
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## Rome is booming, but for stars and newcomers, the city remains a challenging place to build

# Correspondent's File

**By Paul Bennett**

An architecture critic writing in the 1640s could have easily named Francesco Borromini the top architect of Rome—and, by extension, the Western world. Borromini walked onto the scene with a revolution at San Carlino, and followed this with some of the most important commissions in the city, including the redesign of San Giovanni, the mother church of the Catholic faith. He was also hard at work on the eye-popping Sant'Ivo church, today still considered one of the most important buildings in the world. Yet this early critic might have regretted his pick a decade later,

*Paul Bennett, a Rome-based writer, is a former editor of* Landscape Architecture *magazine.*

when Borromini was eclipsed by his rival and nemesis Bernini, and he found securing commissions in the eternal city a difficult task. By late summer 1667, our critic would have been depressed to read that his prodigy had fallen on a sword, committing a slow and agonizing suicide.

That Rome defeated an architect like Borromini touches on serious matters today as Rome becomes a place for significant new architecture, with top architects such as Zaha Hadid, Rem Koolhaas, and Richard Meier, FAIA, all hard at work on what they hope will be signature buildings that can stand beside the likes of Michelangelo, Appollodorus, and Libera. If Rome defeated Borromini, what will it do to these star architects, much less the city's emerging talent?

"Rome can be a dangerous place," says Livio Sacchi, an architecture critic and professor of architecture at the University of Pescara, in describing the weighty historic context. "You have to be able to digest the city's architectural importance, and then move on. Too many architects have gotten stuck here unable to do good work."

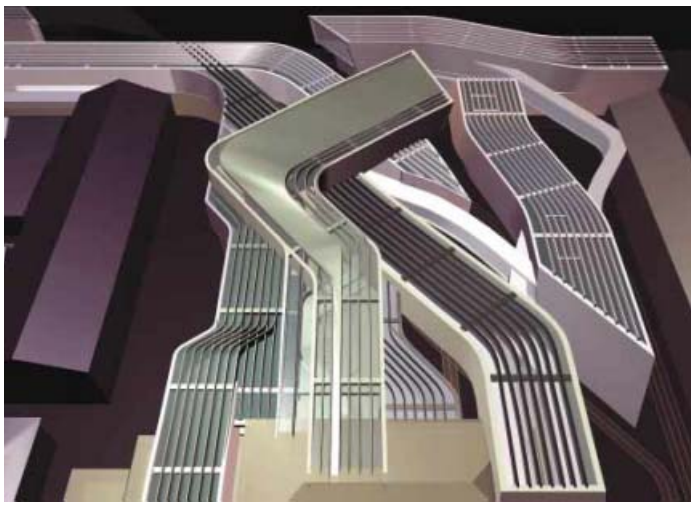
### Starchitects arrive

After several sleepy decades, from the 1950s to the 1980s, punctuated by the Tangentopoli scandal of the early 1990s, in which a shocking system of graft and backhanding was exposed throughout Italy, the architecture scene in Rome began to wake up. The city's rebirth dates to a major civic commission to build a new music center, the City of Music [RECORD, October 2003, page 116], which was won by Renzo Piano. This was quickly followed by two more international commissions: one for a Vatican-sponsored Jubilee Church (or "church of the millennium"), and the other for a new pavilion for the Ara Pacis (altar of peace) monument, built in 13 B.C. to commemorate Augustus Caesar's victories over Spain and Gaul. Both of these attracted a who's who of international architects, and while both were won by Meier, it was obvious by the 1990s that Rome was becoming a place where serious architects could find work. Currently, Zaha Hadid is





**Richard Meier's Ara Pacis project (left two), with the architect's typical Modern styling and materials, has been slowed by politics. Zaha Hadid's Center for Contemporary Art (below) is under construction.**



IMAGES: COURTESY RICHARD MEIER & PARTNERS (LEFT TWO); ZAHA HADID ARCHITECTS (RIGHT).

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designing a major renovation and addition to the National Center for Contemporary Art just north of Rome's center. Her typically ambitious design of interweaving corridors is already under way. The other big museum commission in town is for the Museum of Contemporary Art, or MACRO, won by Paris's Odile Decq, who will completely remodel an old Peroni beer company brewery. Rem Koolhaas has just won a commission to construct a major retail development, called Mercati Generali, on the site of the former city marketplace on the edge of town.

"All of these international architects coming to Rome, winning competitions … it's great," says Massimiliano Fuksas, Rome's homegrown star architect who, after several years' exile in Paris, returned to the city in the wake of Tangentopoli. "But what is most exciting is that these things are getting built." What many (including Fuksas himself) believe will be the crowning achievement of his career, a convention hall in the EUR suburb of Rome, designed like a cloud, is in the last phase of development.

**The challenges of history**

While paying attention to the traditions of the 1970s is important in most places, in Rome one also has to think about the 1870s, the 1770s, the 770s, and the 70s, as well. Nowhere else does an architect need to grapple with so many different eras and traditions, and so history itself becomes a key challenge. "The most important aspect of building in Rome is the layers of history," says Meier. His Jubilee Church makes references to Borromini and the traditions of Baroque church building, but since it sits in the suburbs, Meier admits it escapes the historical trap. But the Ara Pacis is located in the center of the city, a few feet from the 1st century Mausoleum of Augustus on the east bank of the Tiber. Meier describes his Modernist, white travertine-and-glass pavilion as a bridge between eras.

Meier spent the better part of the design process for the Ara Pacis project fighting the flamboyant arch-conservative Vittorio Sgarbi, who was serving as minister of culture. Construction was halted for more than a year, and to all appearances, it looked like it wouldn't start again.

## Second City: Milan leads the Italian construction boom. But will it last?

**After a bad year in 2003, the Italian construction industry bounced back onto a boom track that began in 2000. The construction index, which weighs starts against other data, has increased by 20 percent in the past four years, and in 2004 rose more than 6 percent.**

**Most of the building boom is taking place in Milan. The main news this spring is the completion of a new facility for the Milan Trade Fair, which was relocated from its fairgrounds in the city center to a western suburb and took the opportunity to greatly increase its size.**

**"For a time, the Fiera was the biggest construction site in the world," says project architect Massimiliano Fuksas. "The main hall is a mile long. There's 600,000 square feet of glass in the structure."**

**The Milan scene heated up for a while in the 1970s and 1980s before scandal brought collapse in the 1990s to the entire Italian construction industry. But after a half decade of economic recovery, Milan has seen its key industries—media, fashion, and the design trade fairs—rebound with strength. The Fiera fairs themselves have grown by 30 percent (according to revenue) over the past five years, and with the expansion, the Fiera will become the second-largest exhibition center in the world.**

**Unlike Rome, where most new commissions are cultural or public buildings, most of the new construction in Milan is private and commercial. The most recent headline-grabbing commission was announced last fall for a three-tower office complex designed by Daniel Libeskind, Zaha Hadid, and Arata Isozaki. Also on tap is a 525-foot skyscraper by Pei Cobb Freed—topping out Gio Ponte's Pirelli Building to become the tallest in Italy—and a "city of fashion" zone planned by Cesar Pelli.**

**The boom in construction is outstripping the Italian economy, which has only been growing by 2 percent. But market analysts at Market & Business Development warn that this is due in part to the rebound effect of the end of the building recession in the 1990s. At the same time, many worry that the high value of the euro and the inflation rate in Italy, which one national statistics agency put at nearly 10 percent at the end of 2004, spell only short-term success. Already the bubble may be bursting. After a much-discussed competition for the high-profile European Library of Information (BEIC) won by Bolles+Wilson of Munich in 2001, the library has been unable to raise capital to begin planned construction in 2005.** ***P.B.***





**Fuksas's Milan Trade Fair facility under construction (above). A coming skyscraper complex by Zaha Hadid, Daniel Libeskind, and Arata Isozaki (left). Pei Cobb Fried's new skyscraper (below).**



IMAGES: © FUKSAS ARCHITECTS (TOP); ZAHA HADID ARCHITECTS (MIDDLE); PEI COBB FREED (BOTTOM).



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But while Sgarbi huffed and puffed about what he deemed a cultural abomination on his television talk show (yes, the culture minister of Italy was also a talk-show host), Meier withstood the maelstrom quietly. "You just have to hold on tight," says Meier partner Nigel Ryan, "and, on one level, not pay attention."

Piano's City of Music took nearly 10 years to construct. Meier's church over six. The Ara Pacis pavilion is entering its fifth. But the steel frame of the roof is up, and work is progressing quickly.

**FINALLY, AFTER SO MANY YEARS, I HAVE AN ANSWER FOR WHEN PEOPLE ASK ME WHEN IT WILL BE DONE: SOON.**

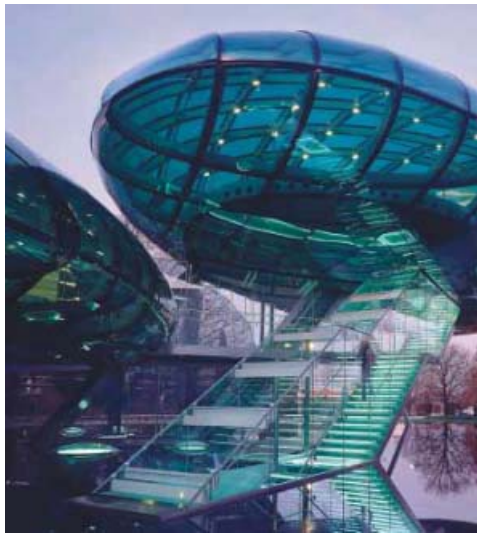
"Finally, after so many years, I have an answer for when people ask me when it will be done," says Meier. "It's a very Roman answer: Soon."

By necessity, history largely defined Piano's auditorium, which makes strong references to the Pantheon with its lead roof and to Imperial Roman building with its use of brick and travertine and wooden trusses.

### A harder road for emerging architects

Regardless of the grip of history and politics, all of these big, headline-grabbing projects may not be the best measure of Rome's mettle. "Rome now has, like so many other cities, so-called 'big name' architecture," says Pio Baldi, director general for contemporary art and architecture in the Italian ministry of culture. "But what Rome really needs is a lot more little buildings by little-known,





**Renzo Piano's City of Music (above) helped spur Rome's Modern rebirth. Roman architect Massimilano Fuksas's Ditta Nardini distillery and research center in Vicenza is similar in form to the architect's future convention hall in EUR, a suburb of Rome.**

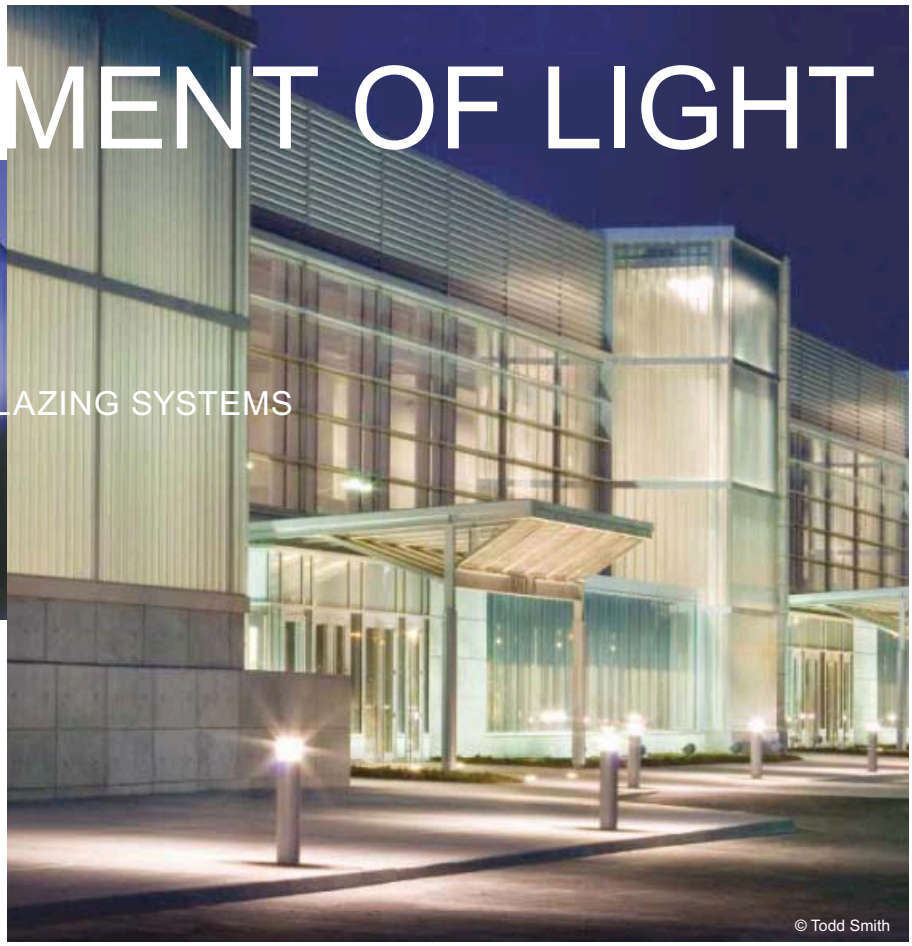
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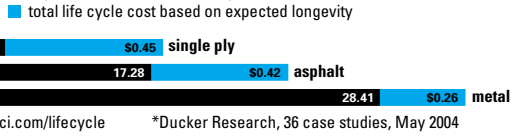
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but excellent architects." Baldi says that his ministry will be spending a lot more time fostering these kinds of commissions. One reason, he says, is that Rome has a glut of architects. Unemployed designers complain that too many of their number are leading tours, teaching high school, or writing articles about architecture instead of actually building. The one dissenting voice is the ever-jovial Fuksas, who argues that since architects are artists, there can never truly be a glut. "Would a painter complain that there were too many painters and that there should only be 30? No. He'd say it didn't matter, because he was the best." The positions that architecture school graduates do get in studios pay famously low or not at all.

## "WOULD A PAINTER COMPLAIN THAT THERE WERE TOO MANY PAINTERS AND THAT THERE SHOULD ONLY BE 30?"

Many argue that federal and municipal governments should be doing more to help and protect small, local firms rather than doling out big commissions to the Rem Koolhaases of the world. Instead of waiting for this to happen, a small organization of young architects calling themselves the "Rome Eight" has banded together to sponsor lectures, write articles, and generally raise a ruckus about what they see as Rome's ultra-conservative and hard-to-penetrate architectural aristocracy. The group includes Labics [profiled in RECORD's Design Vanguard 2003, page 76], Nemesi, N!, T-Studio, Delogu Architetti, Luigi Centola, King & Roselli, and Giammetta & Giammetta. Heavily influenced by northern European trends, the group has taken a strong position against the old guard of Roman architecture—the deans of the architecture schools, who exert a powerful dominance over architecture in this city.

"Italy has been frozen by people like Paolo Portoghesi, Vittorio Gregotti, and Gae Aulenti," says a prominent figure in the Rome architecture scene, referring to some of the great names of the 1970s and 1980s, who all occupy major posts in the schools. "And so the young, frustrated by this, react by turning their backs on it all. This is good, because it shakes things up. But also they risk turning their back on history." ■

IMAGE: COURTESY OFFICE FOR MUNICIPAL ARCHITECTURE

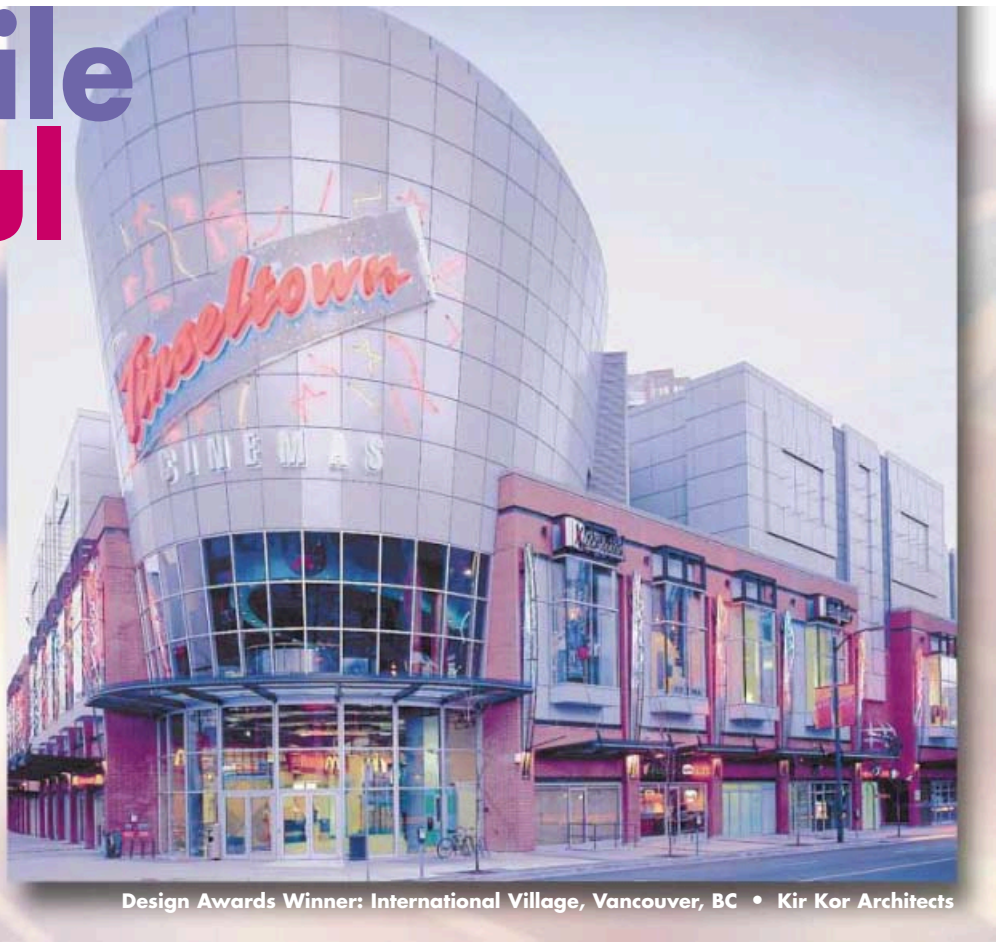

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# Mexico City, chaotic and creative, launches a new generation of talented architects

# Exhibitions

By Sam Lubell



**Mexico City Dialogues: New Architectural Practices.**
*Curated by José Castillo. At the Center for Architecture, New York, through May 7, 2005.*

This spring, New York City's Center for Architecture assembled its first international exhibition, *Mexico City Dialogues: New Architectural Practices*, presenting 14 projects by young firms from one of the world's most complex and expansive cities. Wisely, the center chose a Mexico City native to curate the exhibition, José Castillo, a professor at the Universidad Iberoamericana, and currently a principal at Mexico City–based Arquitectura 911sc. Castillo has put together a show that, like its subject, is at times confusing, and perhaps too ambitious, but nevertheless fascinating. Linking the political, legal, and social trends of the city with the design and development strategies of these projects, the show provides a rare glimpse of a developing world of architecture that is often ignored by the architectural elite in the U.S. and Europe.

The show begins with a Mexico City Fact Room, displaying introductory statements by local intellectuals, as well as background information on the city presented in aerial maps, time lines, and detailed statistics. The room offers a first glimpse into the chaotic world of building in Mexico City, a sprawling and quickly growing metropolis of 18.5 million, where the majority of development happens outside of any planning framework. The presentation is sprawling, as well: A time line, for instance, contains not only important dates, but pictures of significant architectural projects, rapidly climbing population figures (2.9 million in 1950, 16.9 million in 1990), developing income levels, and so on.

Like this blitz of often-overlapping data and imagery, the immense scope of the city appears in many ways overwhelming, even horrifying. But the exhibition helps find a silver lining. As Miguel Adria, architect and editor of the magazine *Arquine* in Mexico City, says in one wall panel, "It is in the cracks, in the fissures of imperfect structure where opportunities exist." TEN Arquitectos principal Enrique Norten, who served as a sort of godfather to the young architects at the exhibition's opening, describes the context within which these designers are working: a remarkably complex city undergoing rapid change. "The overlaps that result from this phenomenon make it distinct from other great metropolises," he notes.

Mexico City's character forces the creativity—not just in form but in program—that is evident in many of the chosen projects, designed by some of the city's most promising young architects. In the exhibition's main space, on the center's lowest floor, Castillo manages to include not only photographs, drawings, models, and architectural commentary, but also descriptions of the legal and economic hoops these enterprising architects managed to jump through to make these buildings possible. Project notes also describe the neighborhoods in which the projects are built—a wide range, including poor communities on the outskirts of the city and posh, affluent zones.





**Dellekamp Arquitectos's AR 58 apartment building (above). Volvox's Lope de Vega 324 apartment (right).**

Even in richer and more established neighborhoods, architects must contrive creative solutions. Dellekamp Arquitectos's AR 58 apartment building, located in Condesa, a rejuvenated area with stylish bars and restaurants, offers an intriguing solution for dense residential design. Matching the area's liveliness, the architects have built a series of stacked housing units separated by voids "floating on air," as the exhibition text states. The mix of

PHOTOGRAPHY: © OSCAR NECOECHEA (TOP); LUIS GORDOA (BOTTOM)



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**Mauricio Rocha's Oztotepec Market replaces an old market's tents.**

corrugated aluminum (a popular material in these projects, perhaps because it is cheap and offers rich texture), sheet aluminum, and concrete give each unit a distinct identity. Apartment balconies provide visual connections with the street. In the Lope de Vega 324 apartment building, the architectural firm Volvox uses a contemporary aesthetic in a traditional neighborhood by turning strict local code requirements for open space to its favor, creating a vertical inner garden that helps foster density and creates a unique mixture of interior spaces. At the FALCON Corporate Office, Rojkind Arquitectos transformed an existing house in a quiet residential area into a visual marker for the company (other local companies tend to tuck their offices behind discreet fronts). The architects used colorful panels to create a pixelated screen around the building and provide space for a cactus garden between the offices and the screen.

In low-income areas, architects have fewer resources to work with, so they need to be more creative and less reliant on standard design solutions. FRENTE Arquitectura, for example, built a group of low-income houses quickly and cheaply using variations of color and form to break the typical "row after row" monotony of public housing. Subtle changes in light pastel colors lend energy and richness to a type of project that too often reads as a sea of white or gray apartment blocks. Another example of innovation applied to social housing is the San Pablo Oztotepec Market, in one of the city's poorest areas, where Taller de Arquitectura/Mauricio Rocha replaced the tents of the area's old market with elevated units separated by corrugated-metal-louvered shades.

The exhibition places project notes and images in horizontal bands around the gallery's back walls, an arrangement that highlights the connections between the projects (and saves space in this often-crowded New York architecture hub). But this setup sometimes makes it difficult to focus on individual works. For taller viewers, getting to see the firms at the bottom of the three bands was often an exercise in back strain. But it was usually worth the effort. As the exhibition makes clear, many talented architects are working south of our border. Distanced from the herd mentality of large firms and energized by a hyperpopulated urban environment, this emerging generation of designers is developing its own set of aesthetics, strategies, and ideas. Indeed, as architectural talent and knowledge expand and the globalized world continues to shrink, the focus of the professional discourse will inevitably shift. Certainly, more exhibitions will focus on emerging architecture from once-ignored corners of the world. The prospect might be daunting, considering the difficulty of keeping track of what's happening just in local circles. But this new reality offers opportunities both overwhelming and exciting. ■

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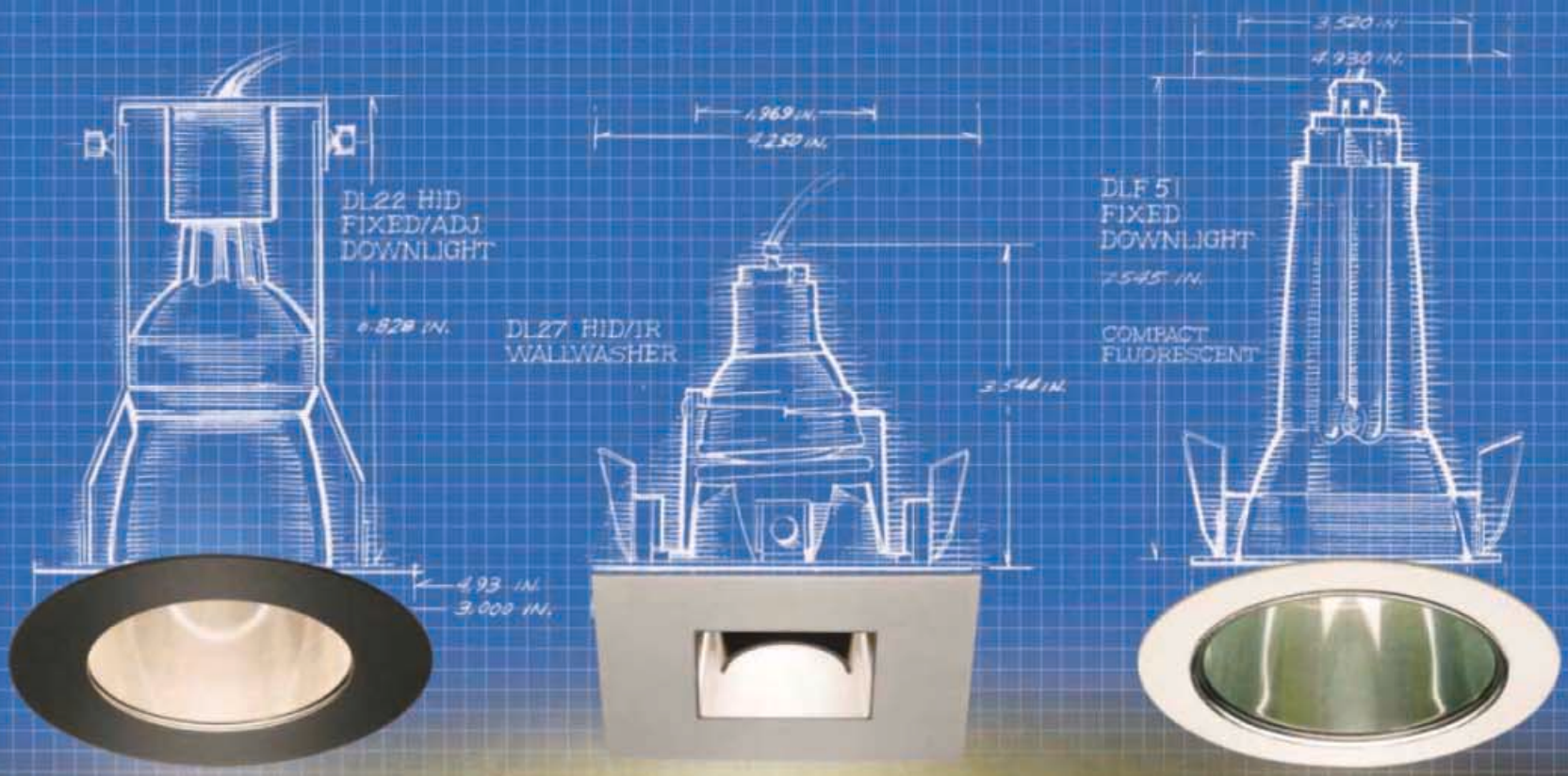
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# For and about the emerging architect





**This month in archrecord2, we take a closer look at the five architects selected for the the 2005 American Institute of Architects' Young Architects Award, to be presented at the upcoming AIA National Convention. Scattered throughout the U.S., these architects have made significant contributions to the profession and have undertaken leadership roles within their communities. For more projects completed by this year's award winners, go to the archrecord2 Web site.**

## Design

### Young Architects at Their Best

As is customary, during this year's American Institute of Architects National Convention and Design Exposition in Las Vegas later this month, five architects will receive the 2005 AIA Young Architects Award. All at early stages in their careers, each of the recipients demonstrate exceptional characteristics in their professional work that herald a promising future. These architects' contributions range from creating award-winning and sustainable design to mentoring and teaching to leadership in their communities.

As a principal of the Washington, D.C.–based Inscape Studio, Rick Harlan Schneider, AIA, is widely recognized for his sustainable design practices. Schneider, in fact, received the AIA/D.C.'s Presidential Citation for Sustainable Design in 2002 and 2003. His work includes master planning for the greening of communities, and residences he's either designed or renovated to be more environmentally responsible. The architect is instrumental in bringing this sustainability to the community, for both architects and the general public, through educational programs with the National Building Museum and the Catholic University of America, as well as his role as chairman of the AIA/D.C. Committee on the Environment.

There are several areas in which Eric Strain, AIA, has sought to bring attention to the architecture of Las Vegas. Strain's own firm, assemblageStudio, has earned 18 awards for design excellence in both public- and private-sector projects. This architect, who grew up in the Las Vegas area, also plays an active role in the leadership of the local AIA chapter, where he has served as president and was instrumental in creating *Architecture Las Vegas*, a publication devoted to showcasing the local architecture. Strain's involvement is not limited to native architecture, but includes art and design in the community: He has served as director of the Nevada Institute for Contemporary Art and coordinates arts and design symposia.

Miguel Rivera, AIA, is recognized not only for his award-winning projects at Mitchell/Giurgola Architects, but also for his efforts at Miró Rivera Architects in Austin, Texas, where he is a principal of the firm. His projects, both public and private, have been acclaimed by local and national award programs as well as

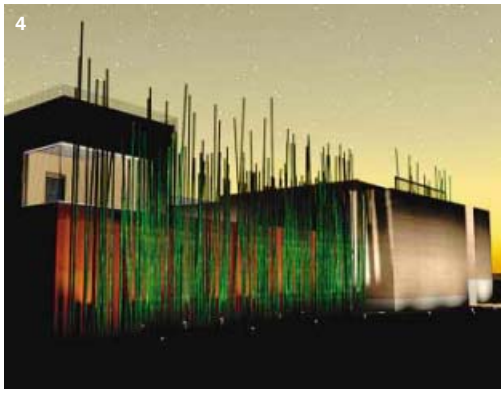






**Inscape Studio**
*Examples of Rick Harlan Schneider's award-winning and environmentally responsible designs: (1) Butterfly Porch, Bethesda, Md.; (2) U Street Studios, Washington, D.C.*




**assemblageStudio**
*Eric Strain's designs deviate from the status quo of local architecture: (3) Mesquite Heritage Museum and Art Center, Mesquite, Nev.; (4) bamboo residence, Las Vegas, Nev.*

PHOTOGRAPHY: COURTESY INSCAPE STUDIO (1, 2); ASSEMBLAGESTUDIO (3, 4)



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**Miró Rivera Architects**
*Miguel Rivera's design sensibilities, in his residential, commercial, and institutional projects, have an impact on the Austin, Tex., landscape: (5) Pool House, Austin, Tex.; (6) Rockcliff Guest House, Austin, Tex.*

PHOTOGRAPHY: © PAUL BARDAGJY (5); JUAN MIRÓ (6)

international publications. Originally from Puerto Rico, the architect also donates his time to various AIA Awards programs: He has served on juries in several states and filled the role of chair of the AIA New York City Design Awards Committee. He often serves as a studio review juror for architecture schools around the country.

Jeffrey DeGregorio, AIA, has used the early years of his career to create a role for himself in the Boston architectural community. At Payette Associates, he is currently a project architect and has worked on several large-scale renovations at higher-education institutions, including MIT, Tufts University School of Medicine, and Princeton University. DeGregorio developed the Young Designers Core, a program that promotes education and career growth within his firm. After the success of this program, DeGregorio initiated Payette Associates' first formalized mentorship program and also contributed to the formation of the Boston Society of Architect's Mentoring Program. Beyond his roles as designer and leader, DeGregorio teaches a design studio at the Boston Architectural Center and serves as a thesis adviser there.

As a project manager at Antinozzi Associates in Stratford, Connecticut, F. Michael Ayles, AIA, juggles a workload that includes design services for government agencies, educational facilities, and financial institutions. And while no longer an intern himself, Ayles has remained active in guiding emerging archi-




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**Antinozzi Associates**
*As a project manager, F. Michael Ayles juggles the daily responsibilities within the firm and also takes time to advocate the importance of mentorship. An example of Ayle's interior projects: (7) Webster Bank Darien, Conn.*

**tects, specifically regarding internship and mentorship. He first worked on promoting the topic locally—for instance, he helped develop the Emerging Architectural Community, which serves associate and young architects, encouraging a focus on community service and providing opportunities for fellowship and networking. He soon moved into a national role with the AIA Intern/Associate Committee and the Young Architects Forum (YAF). As the 2004 chair of YAF, he wrote for numerous publications and spoke at several programs on the topic of firm-based intern programs and the importance of mentoring.** ***Randi Greenberg***

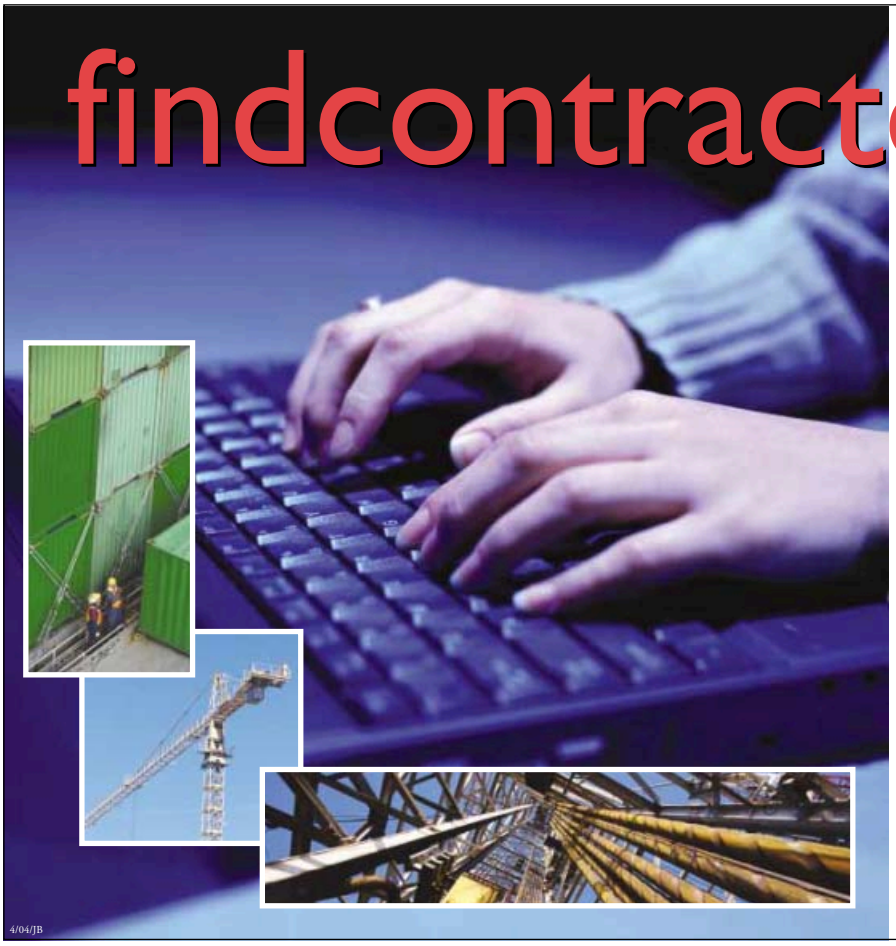
**Many more projects from these award-winning architects are available on the Web at archrecord.construction.com/archrecord2/**




**Payette Associates**
*DeGregorio finds the time to take on the responsibilities of teaching and mentoring while also acting as a project architect on large-scale university work: (8) MIT: PDSI Project.*

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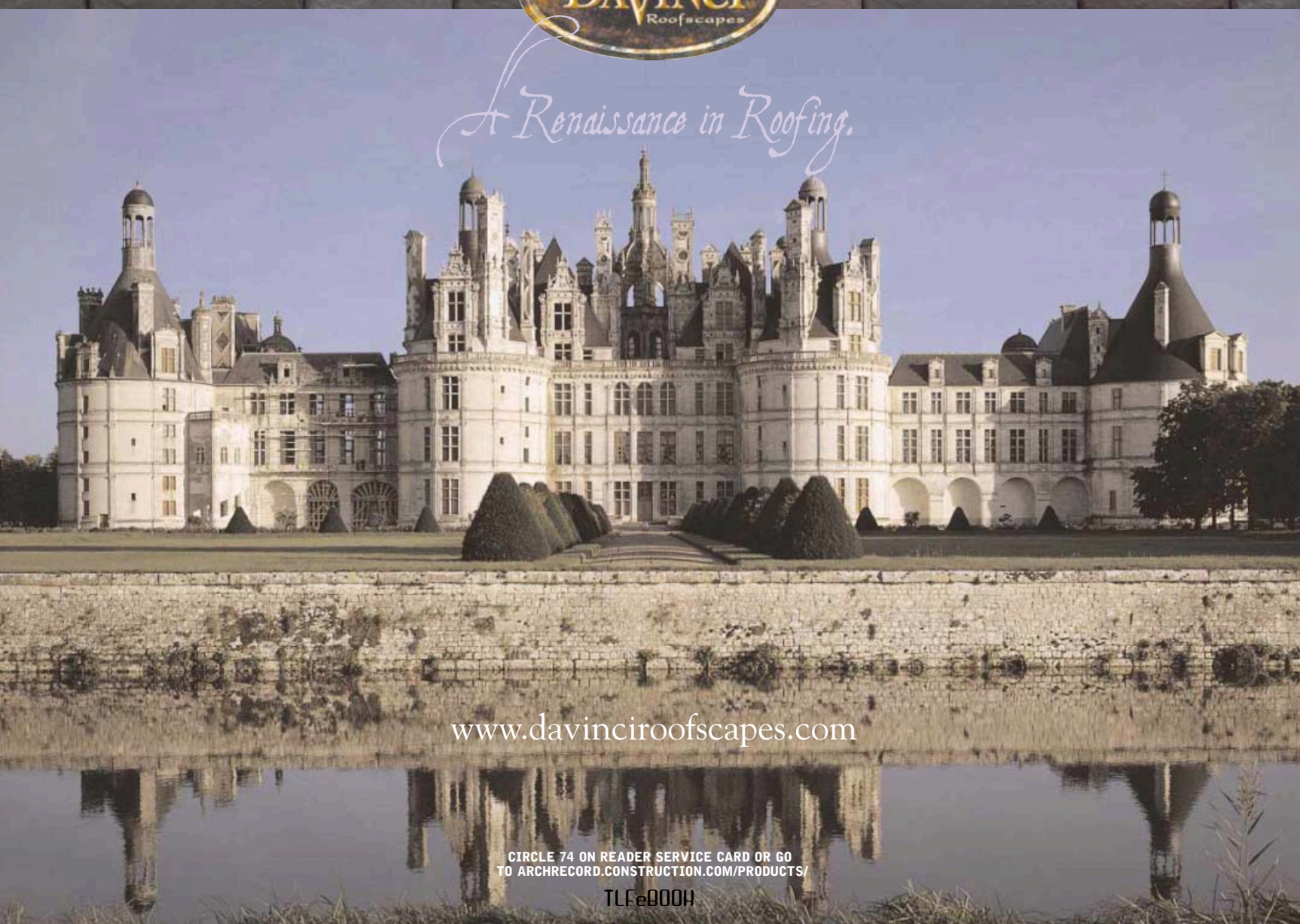
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Looking at four star architects, along with the airports that make their international practices possible

# Books




Architectural monographs have come to look like expensive office brochures, with testimonial essays as introductions. Aside from production quality and style, size and weight (no small matters), they differ mainly in the degree of their authors' endorsements: from simple description to unabashed hagiography.

Four new books on the work of Norman Foster, Richard Meier, Mario Botta, and Cesar Pelli are all very beautifully produced in full color. All use the time-tested format of introductory essays by well-known historians/critics, followed by a presentation of buildings and projects.

Beyond this, the books diverge dramatically in content, style, quality, and value for the reader (or those who simply view architectural images, a very important customer). The following reviews are in order of what I deem to be decreasing quality and value (which also happens to be decreasing price and weight). *Thomas Schumacher*

**Norman Foster Works 4,** edited *by David Jenkins. New York: Prestel, 2005, 563 pages (7.5 lbs), $99.*

*Norman Foster Works 4* is the most ambitious and complete of these four monographs. It is exceptionally comprehensive, with thoughtful essays by well-known authors (at least in the U.K.), including Chris Abel, Francis Duffy, and Peter Buchanan, along with Foster himself. Here, a combination of well-written texts and a clear presentation of the work make the book's $100 price tag well worth it. Along with the essays, we are offered informative text about each project.

The first piece, by Abel, begins with an overall assessment of the Modern movement, its life, its "death" (the destruction of Pruitt-Igoe in 1972), and the Postmodern refutation of Modernism. Abel concludes that only a technological Modernism can tackle the architectural problems of today and tomorrow. For him, Foster's work becomes the natural and inevitable result of the forces of nature, technology, human relations, and economics. Abel presents a chronology of Foster's high-rise buildings, while overstating their importance in the history of world architecture. (I am reminded of Zhou Enlai's response to Henry Kissinger's question as to what the second-most-powerful man in Communist China thought of the French Revolution: "Too soon to tell.")

This does not detract from what is a monumental documentation of an architect's work. There are almost 100 pages devoted to Foster's rebuilding of the Reichstag in Berlin, with preliminary drawings and models, analytical diagrams, comparative studies, construction photos, and the finished product. This is one of the most complete representations of an architect's work I've seen, making it worth its weight. Buchanan's engaging essay on the Reichstag combines formal analysis and description, historical analysis and anecdote.

Duffy, an expert on office planning and design, gives a glowing account of Foster's innovations in that realm, plus an analysis of why the logic and use of symbol made Foster's solution to the World Trade Center competition the best entry. Duffy claims, "Unlike all the other entries, Foster's towers rose to the occasion—they were neither gestural nor arbitrary." Unfortunately, this statement is unsupported with argument; but then, Duffy is promoting Foster. His explanation of why American skyscrapers are different from those in the rest of the world is well worth reading.

Despite such brief excursions into unreasoned praise, the essays in this volume are both informative and convincing. Foster's buildings are presented for what they are: technologically advanced and aesthetically enticing.

This book should not be placed on your coffee table for two reasons: First, it might collapse the table, and second, it deserves to be on your desk to return to from time to time, to peruse the descriptions, the essays, and the images. *T.S.*

**Richard Meier, Architect, Volume 4,** *by Richard Meier. New York: Rizzoli, 2004, 432 pages (5.2 lbs), $80.*

This is the most beautiful book of the group. The antiseptic images have surfaces so clean they almost squeak off the pages. The photos are so perfect they look surreal. The sky is so blue, it can't be real—or is it? These images flawlessly display the essence of Meier's architecture. (Digital photography serves him well.)

Unlike other essayists, Meier's are not engaged in hagiography. Both Frampton and Rykwert give us straightforward descriptions. Frampton's text is mostly laudatory, but Rykwert makes a measured, almost wry attempt at criticism, often of Meier's clients.

The images and drawings are so amazing they make you wonder what is real and what is Memorex. Not only do the computer-generated pictures look good enough to be real, but the real photographs look good enough to be computer-generated. Some are combinations of both. This is unnerving and distracting, as if to make the point that all these images are interchangeable.

Meier's plans make it easy to "read" the spaces, and his elevations—with their black shadows—complement the style of the architecture. Italian historian Giorgio Ciucci has described this sort of imagery, particularly in photographs, as a kind



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of architectural pornography; that is, a substitute for the real thing. Is one condemned to disappointment upon seeing the actual buildings?

For architects trying to understand the ideas behind an architect's buildings through images, this book is exemplary in its presentation. *T.S.*

**Mario Botta: Light and Gravity: Architecture 1993–2003,** *by Gabriele Cappellateo, Giuliano Gresleri, Lionello Puppi, and Heinrich Thelen. New York: Prestel, 2005, 267 pages (3 lbs), $65.*

The subtitle *Light and Gravity* is the perfect leitmotif for Botta's buildings. They are heavy masses for which light and shadow, both inside and out, are primary qualities. (I am reminded of Sir John Vanbrugh's epitaph: "Lay heavy upon him earth, for he laid many a heavy load on thee.") Botta's work is the most material of this group, perhaps of any famous contemporary architect. But it is also very abstract, generating forms that do not derive from the construction methods typically used for these materials.




Abstract too is Giuliano Gresleri's essay. He describes Botta without actually saying much about the buildings, though he writes extensively about their context. Gresleri's piece is a little like contemporary music criticism, or writings on wine: Many images and metaphors, but the metaphoric frames are remote and opaque. And Gresleri's text is translated so close to the Italian that it sounds stilted. For example: "The cataloger and collector of images … Botta can subject history to an analysis that also permits its recovery, and thus he can imbue design with recognizable meanings."

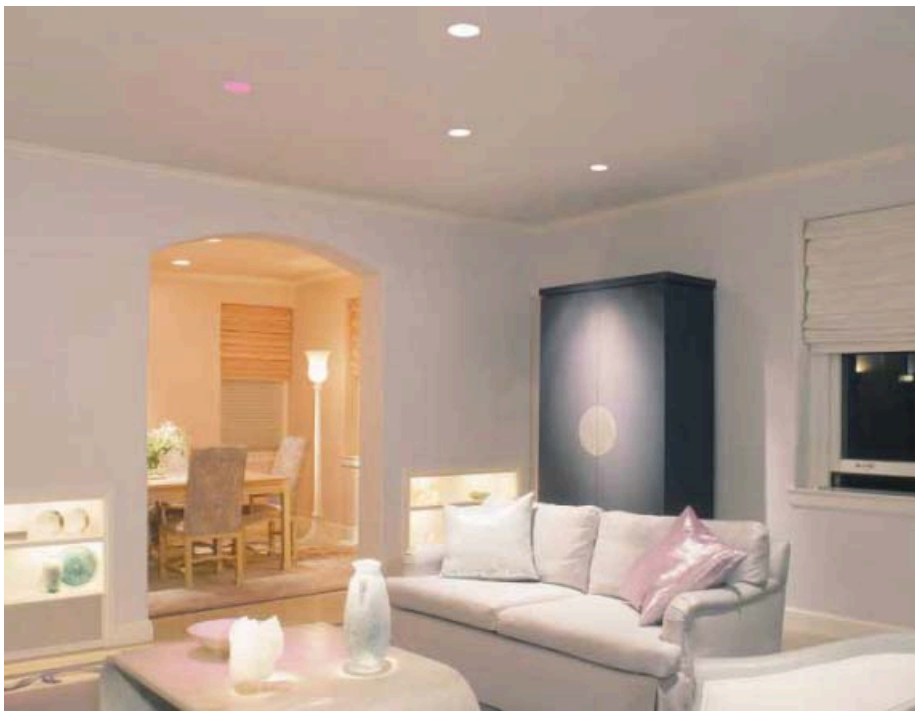
Lionello Puppi waxes even more lyrical. Concerning Botta's origins: "The inspiration for Botta's objective inclination came from the outlines of the hills and mountains of his hometown, Mendrisiotto. These profiles marked the boundaries of the enchanted world of childhood and adolescence…." At least Puppi provides a chronology of Botta's intellectual development and a connection to his Ticino contemporaries and other architects of the 1960s through 1980s. He also mentions Botta's debt to Le Corbusier and Louis Kahn, especially "[Kahn's] exhortation to look to 'the past as a friend.' " Indeed, Botta looked to Kahn himself as a "friend," particularly as regards massing. Gresleri quotes Botta himself about his childhood, saying his mother would exhort him, "Go, and don't waste time." Botta has always been an architect in a hurry.

A final essay by Heinrich Thelen on Botta's drawings, which are liberally sprinkled throughout the text, is totally opaque. The drawings are helpful in understanding his design process, but the plans of his buildings don't adequately inform the reader about the architect's spatial themes. This is a book for the nonarchitect.

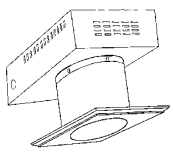
Botta, like Meier, has been true to his origins, and the style of his buildings has changed little: their characteristic motifs and "signature" make them identifiable. Unlike Meier (and perhaps more like Robert Venturi), Botta's work is least convincing, to my mind, in the passages where his signature is most apparent, as in the persistent slot motifs and decorative screens that occur in many elevations of his public buildings and houses.

Botta's newest built work includes the MART (Museum of Modern and Contemporary Art) in Rovereto near Trento, Italy; the Cymbalista Synagogue and Jewish

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Heritage Center in Jerusalem; and the Piazzale della Pace in Parma, Italy. The last is one of the architect's finest works, in my opinion, recalling the best of Carlo Scarpa's buildings of a generation ago. (Botta studied at the University of Venice near the end of Scarpa's tenure.) As is made clear in this book, the Piazzale della Pace exemplifies what is best in Botta's work: a sensitivity to scale, materials, and massing in the dense urban contexts in which his projects are located. *T.S.*

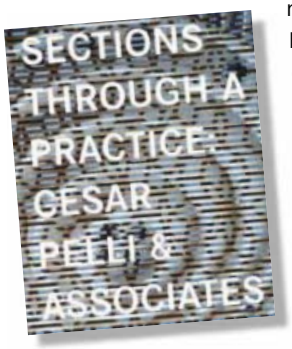
**Sections Through a Practice: Cesar Pelli and Associates,** *edited by Raul A. Barreneche. Germany: Hatje Cantz Verlag, 2004, 247 pages (4 lbs), $40. (Distributed in the U.S. by D.A.P.)*

The title *Sections Through a Practice* could allude to how the work is presented—as if an egg slicer got to the graphics. The format and Bruce Mau's design tend to make many of the images unintelligible. The book includes a pullout, foldout chart of elevations of the tall buildings Pelli has built, from the tallest, 1,483 feet, to a mere 283 feet. It is a very impressive array of built work, but it's difficult to imagine why the foldout is also a pullout. (Do the editors expect us to hang it on our living room wall?)

Graphic design has run amok here. Raul Barreneche's short introduction superimposed over what must be the metaphoric "section" of Pelli's practice is almost impossible to read. The rest of the illustrations are artful, but not particularly edifying or explanatory.

Following 13 pages of uncaptioned photos of Pelli's studio, we are treated to photo portraits of Pelli's tall buildings and then to close-ups of curtain walls, some of which are very elegant. But it would be nice to see some details, wall sections, and such.

When we get to the two primary essays, by Joseph Giovannini and Hiroyuki Suzuki, our frustration abates a bit. Giovannini describes Pelli as an ideological agnostic, whose work, like that of his mentor Eero Saarinen, is a poetic expression of the program and can, therefore, vary from project to project. Giovannini's essay, while waxing a bit too poetic at times, is clear and progresses logically. Suzuki's places Pelli's work in its historic and geographic contexts. Again, the typography makes these pieces difficult to read.




Trying to find anything in this book is frustrating, and the frustration is compounded by the "Inventory" in the back, where single photos of various buildings tease us into thinking we might find them in the text. No such luck.

You have to wonder what audience this tome is aimed at. Architects will want more: plans, sections, documentation of the work. Nonarchitects will need more general essays. An architect of Pelli's stature deserves much, much better, and his low-rise buildings deserve more coverage. *T.S.*

**Airports: A Century of Architecture,** *by Hugh Pearman. New York: Abrams, 2004, 240 pages, $75.*

**Naked Airport: A Cultural History of the World's Most Revolutionary Structure,** *by Alastair Gordon. New York: Metropolitan Books, 2004, 305 pages, $28.*

For all our complaints, airports remain evocative portals to faraway worlds, both concrete and intangible. At once building type and social phenomenon, airports epitomize




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# Books




our collective obsession with time and space, making them a particularly appealing subject for a book. But a difficult one, too: Airports are always changing, inherently fragmented, and complicated by engineering and logistical issues.

Hugh Pearman, architecture correspondent for *The Sunday Times* in London, and Alastair Gordon, contributing editor to *House & Garden* and *Dwell*, have both risen admirably to the challenge, but with strikingly different approaches. Gordon's *Naked Airport* offers an engaging, breakneck narrative of airport history since the 1920s. Pearman's far weightier and more architecturally focused *Airports: A Century of Architecture* illustrates a thematically organized approach with hundreds of beautiful, large, and often surprising color photographs. Differences in format aside, the two books are, in many ways, reciprocal: Gordon's is anecdotal and playful, while Pearman's is analytical and thorough.

But if Gordon's *Naked Airport* is more fun, its story is sadder. As he tells it, airports' best days are behind us, having peaked in a fleetingly glorious jet age in the early 1960s before commencing a death spiral to what Gordon terms "the sterile concourse" of today. The first chapters are evocative and fresh, full of aviation derring-do and colorful anecdotes from the early jet-set period. Gordon's handling of Juan Trippe, the visionary behind Pan Am's early growth in the 1920s, for example, is beautifully evocative, as is the tale of Fiorello La Guardia and the creation of his namesake New York airport. In these chapters, the book meets its ambition of being a cultural history: It draws a fuller picture of airports' social relevance by focusing on them as places rather than buildings and bringing in a range of literary and pop-culture references. But in the end, Gordon's total lack of affection for the post-1960s era leaves what would seem some exciting stories untold. Not even Norman Foster's Chek Lap Kok in Hong Kong escapes unscathed from Gordon's declaration that at airports, "all vestiges of utopia have been lost."

Pearman's view is more triumphant—perhaps because *Airports*' perspective is more architectural; it deals far less with travel's faded glamour. It matters as well that Pearman's tastes run to the high-tech. As a London-based critic and the author of a monograph on Nicholas Grimshaw, his heroes of airport design are clear: Eero Saarinen (of course), Grimshaw, Renzo Piano, Norman Foster, and Paul Andreu, but also workhorses like HOK and Fentress Bradburn. Indeed, Pearman shows surprising and ultimately enlightening patience in tracing the influence of the American megaterminals (Dallas and Atlanta, primarily) on the next global generation, and also in recognizing the importance of planning and engineering on the continuing evolution of the building type. As a writer for the popular press, his prose is always clear, but in recognition that this is a serious book for a serious audience, his conclusions are never flip. The result is the rare coffee-table-size book that is a comprehensive, nuanced work of scholarship.

Bring *Naked Airport* on the plane; but keep *Airports* close to your desk at work. *Andrew Blum*

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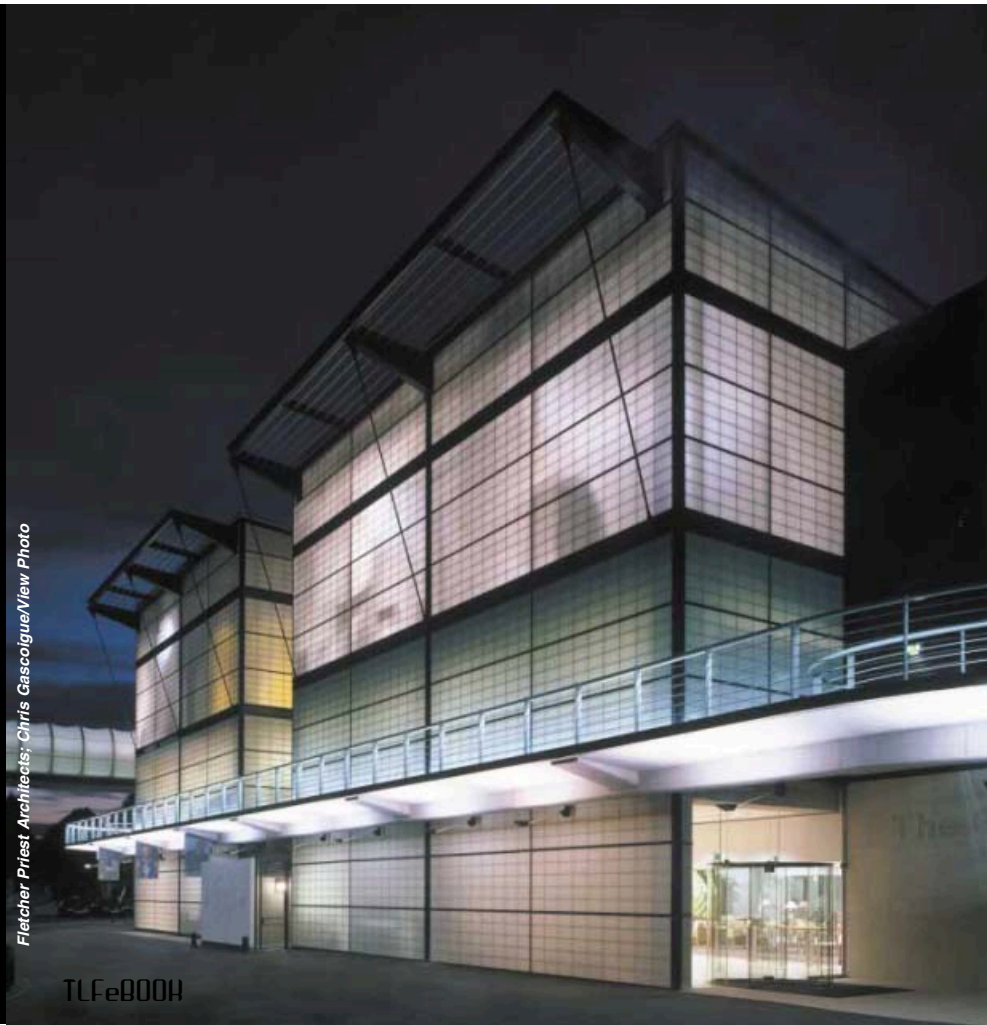
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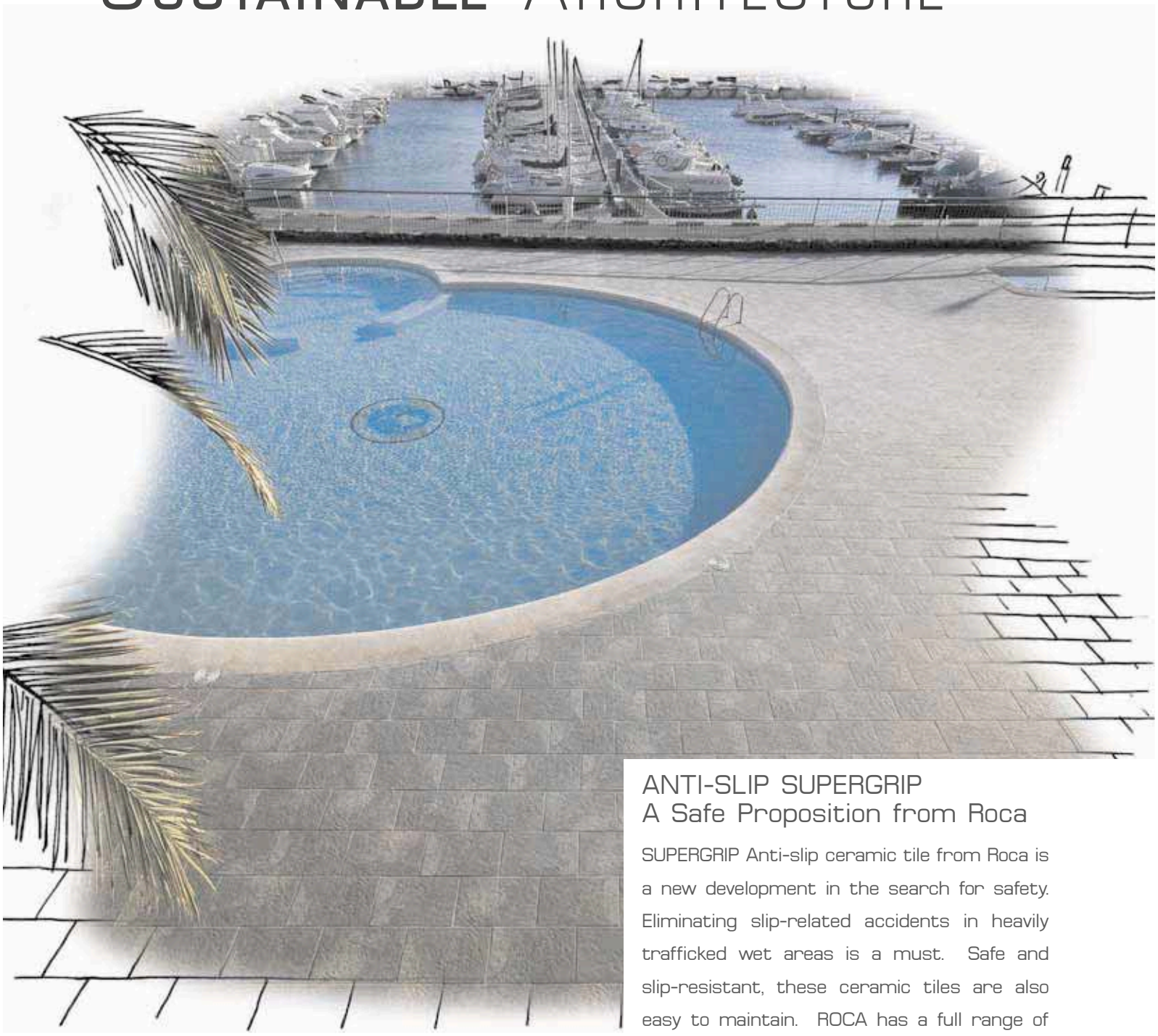
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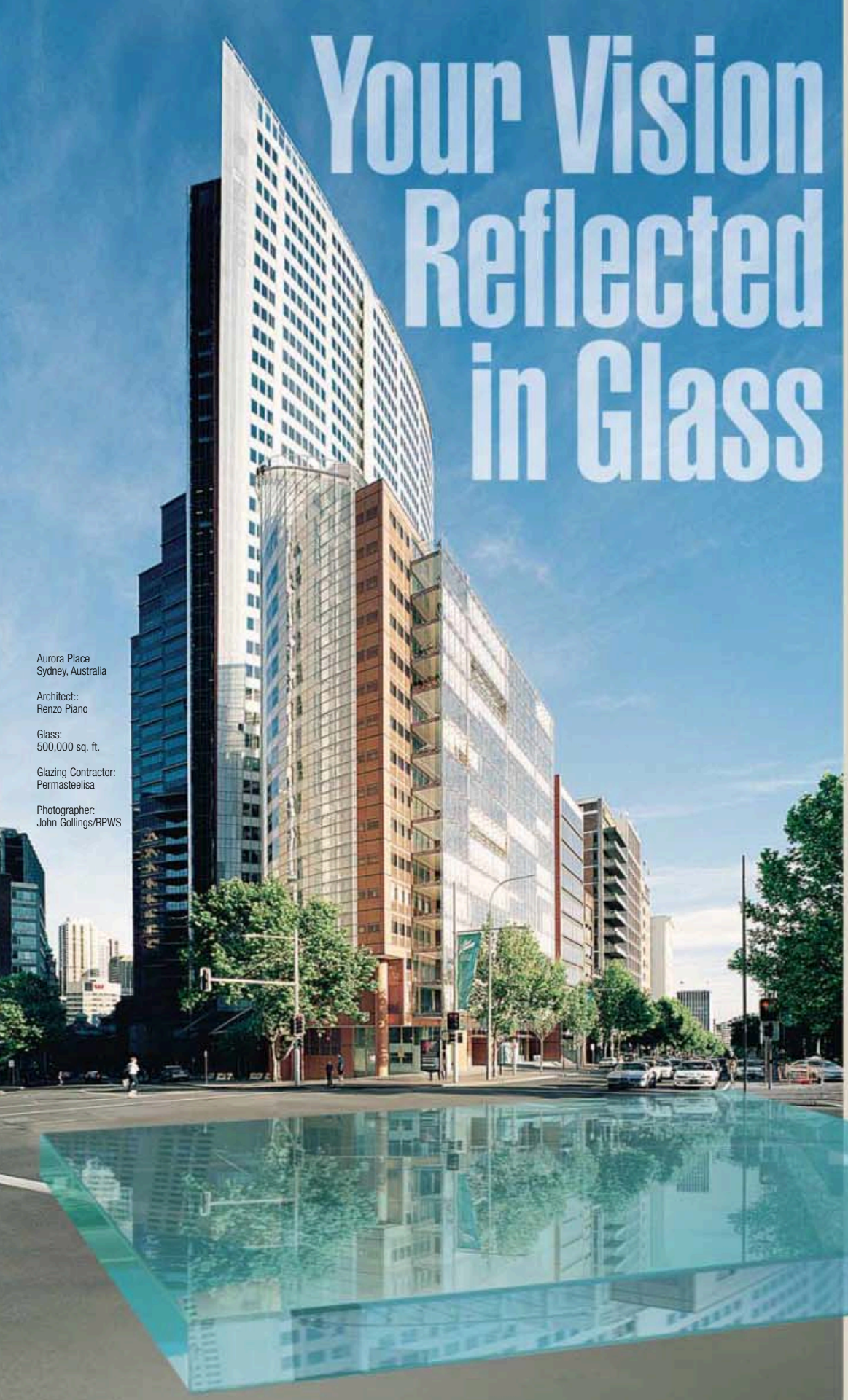
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# Snapshot



PHOTOGRAPHY: © MICHAEL MORAN

**By Beth Broome**

## A traveling museum transports urban visitors

Artist Gregory Colbert wanted to share his photography with the world, but was not interested in displaying it in an existing museum or white-box space. So in 2000, he approached Japanese architect Shigeru Ban to design a temporary, transportable museum for his show *Ashes and Snow*, a collection of sepia-toned prints depicting wild animals and humans communing in exotic settings. The resulting 45,000-square-foot Nomadic Museum, which opened on March 5 on Manhattan's historic Pier 54, at first glance could be mistaken for a meticulously stacked pile of shipping containers awaiting pickup by a cargo vessel.



Initially, Colbert had envisioned the museum as one of Ban's signature paper-tube structures. While the architect's first attraction to this unusual building material had nothing to do with its sustainability, it was just this quality that drew Colbert to his work. "Colbert liked what I was doing," says Ban, "reusing existing material and finding a different meaning for it." Ban immediately realized, however, that transporting a museum of this sort would be prohibitively expensive. Borrowing on the principle for his 1998 design for a small traveling exhibition of furniture, Ban proposed to employ steel shipping containers as the principal building unit for the museum. Not only could the containers serve to transport other building components, but additional ones could easily and inexpensively be rented throughout the world, so most



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**Shigeru Ban's Nomadic Museum offers New York City visitors a moment of silence on the edge of a frenetic city. Soon, the museum will pack up and bring the show to Los Angeles and points beyond.**

material would not have to be transported at all. A total of 148 containers form the boxlike structure, arranged in a checkerboard configuration with PVC membrane covering the openings. Colbert, who Ban says gave him the freedom to design, was pleased with the decision and particularly appreciated that the world-traveled containers imbued the project with their own histories.

While Ban says he was not inspired by Colbert's art, per se, the idea to articulate the different world of each photo influenced the interior design. Two rows of 2½-foot-diameter recycled paper tubes not only support the trusses for the pitched PVC roof, but also form a majestic colonnaded gallery that gives space to the individual photos. A central walkway made of recycled scaffolding planks runs down the center, bordered on either side by banks of river stones.

The second stop for the museum, on which Ban collaborated with his New York City–based partner Dean Maltz, will be the Santa Monica Pier in Los Angeles. There, Ban will reconfigure the building blocks to fit the site's dimensions, creating a similar, though unique space. This evolving and adaptive nature will, no doubt, come to be one of the project's defining qualities as it travels the world.

Despite all his efforts, Ban's hope is for the museum to disappear and become a backdrop to the art. "It's like going into a cathedral," he says. "First, you're really amazed by the space, but after you sit down and start praying, the space is almost gone." The Nomadic Museum is, indeed, a temple of sorts: a spiritual cloister that shutters out the drone of New York's West Side Highway and the helicopter traffic just beyond its walls. Whether or not the building, in all its quiet splendor, is capable of becoming invisible, however, is another question altogether. ■



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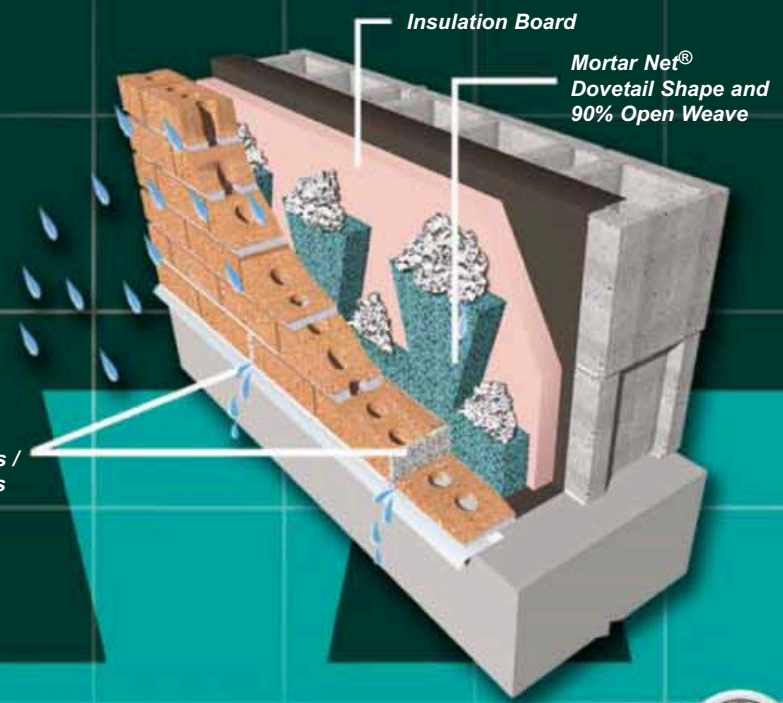
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# American Institute of Architects

# 2005 Honor Awards


Architecture p. 116
Interiors p. 130
Urban Design p. 146
25 Year Award p. 152
Firm Award p. 156
Gold Medal p. 162


*Every spring, RECORD provides editorial coverage of the winners of the AIA Honor Awards, which represents the highest recognition of excellence in architecture, interior architecture, and urban design. Projects were selected from more than 630 submissions, with 35 recipients to be honored later this month at the AIA National Convention and Expo in Las Vegas. In addition, in this issue we feature the Gold Medalist, the Firm of the Year, and the 25 Year Award winners.*

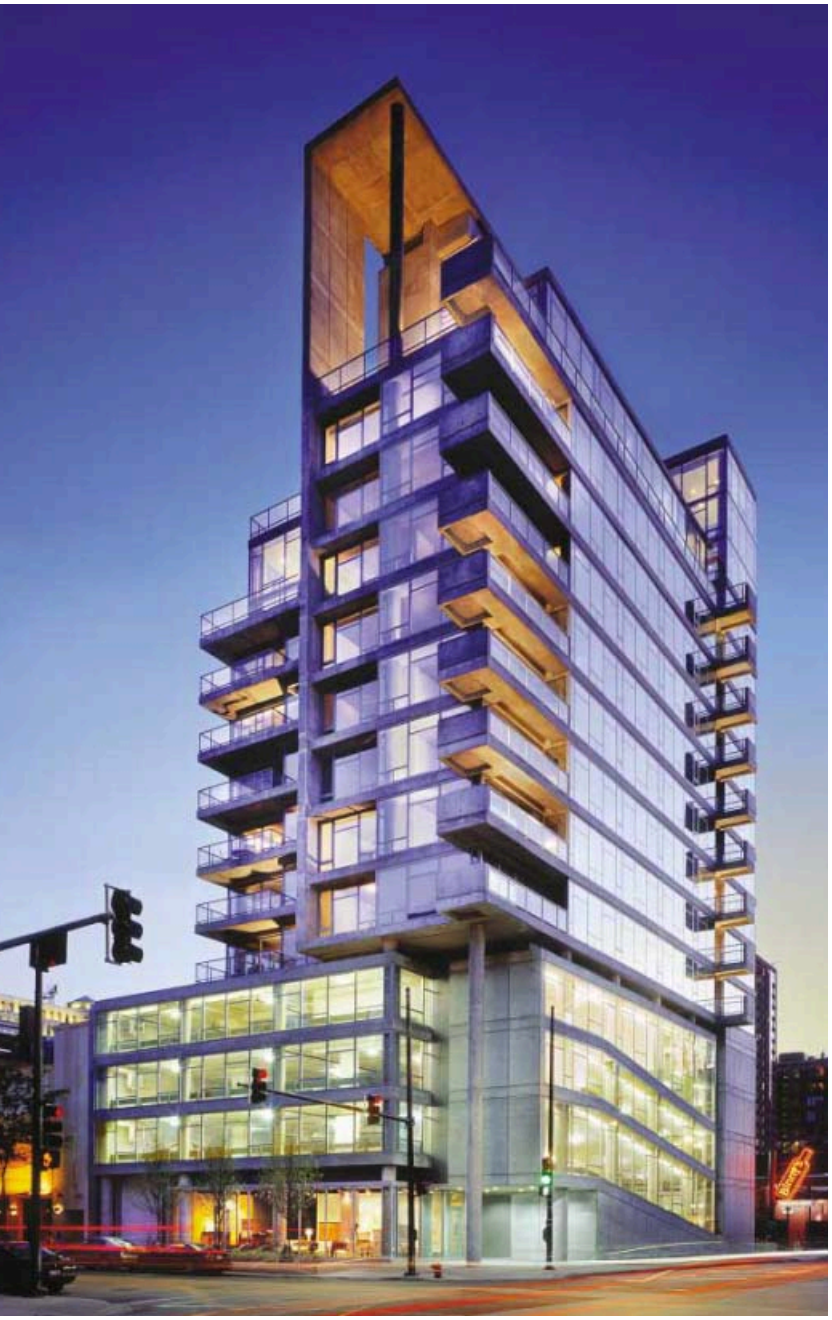
*The jury chairs included Thomas W. Ventulett III, FAIA, chair for architecture, who felt the winners conveyed exceptional qualities of light, space, craftsmanship, sustainability, and context. The chair of the interior design jury, Mark McInturff, FAIA, saw a strong connection of project to place through evocative use of materials and elegant detailing. Michael Willis, FAIA, chair of the urban design jury, said, "This year's projects were all about community-building and grappling with the differences of edge and place, in order to make meaningful connections to people." Architects are forever harmonizing competing interests in the realization of their work, one of their singular talents.*

*Santiago Calatrava, FAIA, the brilliant architect-engineer, received the 61st AIA Gold Medal. In recognition of his legacy to architecture, his name will be engraved in a granite wall in the lobby of AIA headquarters in Washington, D.C. The Yale Center for British Art, designed by Louis I. Kahn, FAIA, received the 25 Year Award. The jury noted, "[This building] is one of the quietest expressions of a great building ever seen—so rewarding and exhilarating when you step inside." And lastly, the Chicago firm of Murphy/Jahn received the Firm Award, the highest honor the AIA bestows on an architecture firm, for their consistently forward-looking vision. In honor of these winners, RECORD is presenting their work on the following pages.* Jane F. Kolleeny



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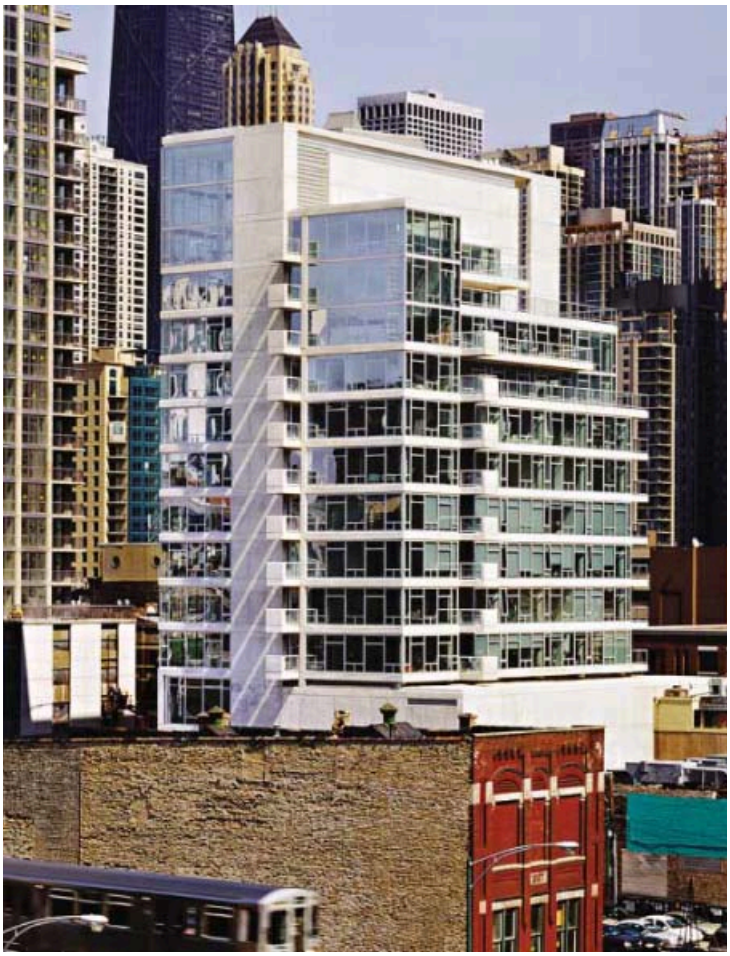
# ARCHITECTURE



**1. Contemporaine at 516 North Wells**
*Chicago*
**Architect:** *Perkins+Will*

Although this 28-unit condominium tower rises higher than most buildings in Chicago's River North area, a neighborhood of warehouses converted for residential and retail use, its sculptural quality and the articulation of its different functional parts allow it to blend seamlessly into the scale of its surroundings. The building's four-story base contains retail and parking. A glass curtain wall helps enliven the street by revealing the automobile ramps and structural bracing. An 11-story residential tower rises from this base. To create visual energy, the architect "eroded" one corner of the tower and cantilevered balconies on another corner.

**"Moves beyond Miesian forms to create a compositional expression viewed from every side."**





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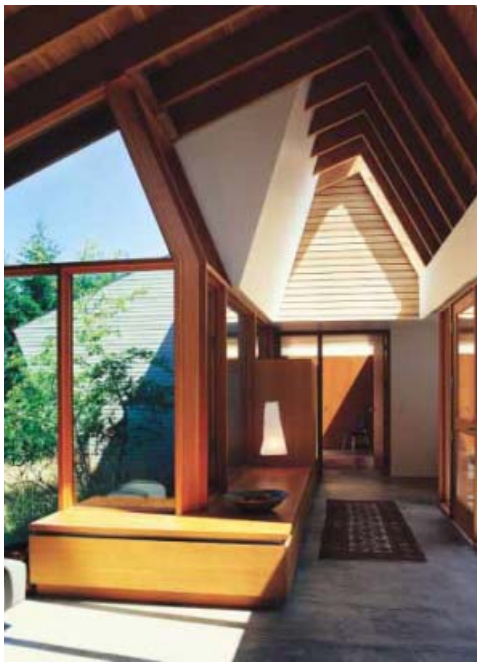


**2. Agosta House**
*San Juan Island, Wash.*
**Architect:** *Patkau Architects*

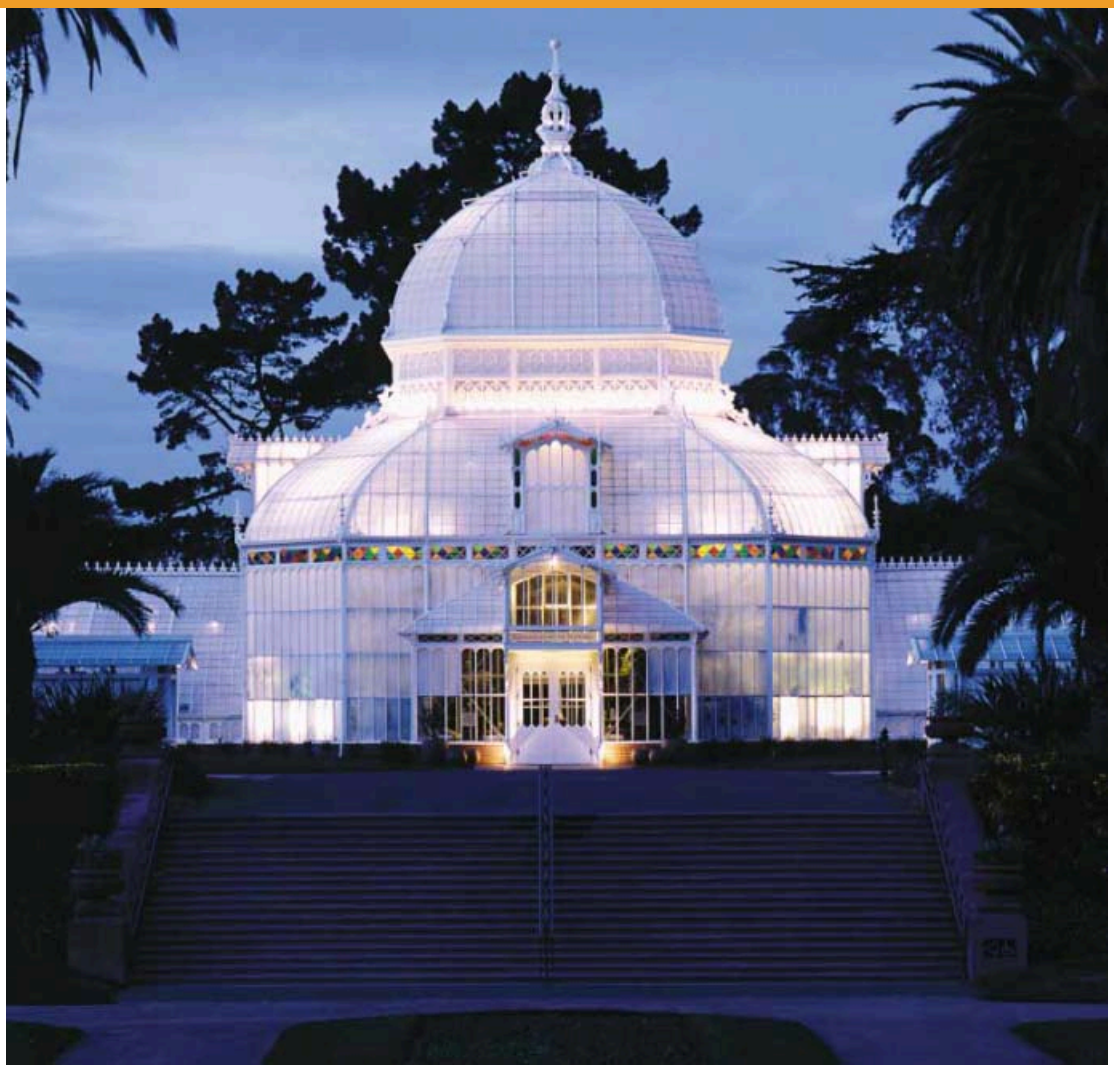
Built for clients who were relocating from Manhattan, this 2,775-square-foot residence is situated on a 43-acre estate on rural San Juan Island, Washington. The exterior is clad in light-gauged, galvanized sheet steel, which provides protection against both the weather and forest fires. Exterior walls and roof lines are sloped to mimic the natural grade surrounding the house. The geometry extends into the interior spaces, where nonstructural bulkheads define smaller rooms. Resting on a concrete slab foundation, the structure is a combination of fir timber framing, which is left exposed, and conventional stud framing, which is clad in painted gypsum board.

**"Placed in such a way to preserve the integrity of the site, this residence allows the clients to live in harmony with nature."**





PHOTOGRAPHY: © JAMES DOW



**3. Conservatory of Flowers**
*San Francisco*
**Architect:** *Architectural Resources Group in collaboration with Tennebaum-Manheim Engineers*

Located in San Francisco's Golden Gate Park, the Conservatory of Flowers survived countless earthquakes since it opened in 1878. But a series of winter storms in 1995 proved too much for the delicate greenhouse and forced its closure. The architect and engineer collaborated to repair and restore the historic building, insert an HVAC system, and strengthen the structure against lateral forces. The work included replacing wood arches inside the greenhouse that had rotted as a result of humidity. The architect also developed a master plan for the site that includes space for new galleries, administrative offices, and restrooms.

**"A glowing icon for the park at night, ornate celebration of greenhouse by day."**





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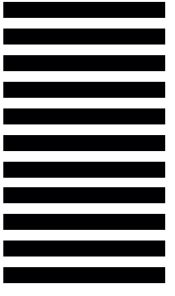
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**4. Emerson Sauna**
*Duluth, Minn.*
**Architect:** *Salmela Architect*

**"Simple, spare, elegant use of natural materials. Sheds the water like a duck's back."**

Built for clients who grew up with the Minnesotan tradition of sauna bathing, the Emerson Sauna is a provocative arrangement of forms and materials. The sauna room is located on ground level and lined with brick walls, not wood, to allow for radiant heating. Cantilevered from one end of this room is a triangular-shaped upper story that contains a cooling porch. It is essentially a long tube, formed by tightly packed wooden framing, open at both ends to allow breezes to pass through. A vented lap-board roof protects the tube's structural elements, while sod covers the sauna's roof.





PHOTOGRAPHY: © PETER BASTIANELLI KERZE



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PHOTOGRAPHY: © JOHN LINDEN

**"Barns have finally achieved their heyday in this simple structure located in the hills of California."**

**5. Somis Hay Barn at the Lucky Dog Ranch**
*Somis, Calif.*
**Architect:** *SPF:a*

In designing this barn and stable, the architect was guided by two contrasting styles: the rhythmic rigor and permanence of Modernism, and the rough, ever-changing quality of *wabi-sabi*, a Japanese aesthetic that finds beauty in imperfection. Modernism's order is expressed by the barn's sleek 12-by-12-foot structural steel system, while *wabi-sabi* is represented by the impermanent nature of the bales of hay that line the exterior walls, insulating them and acting as a windbreak. The hay changes odor and color and is used up one bale at a time, for bedding and feed.



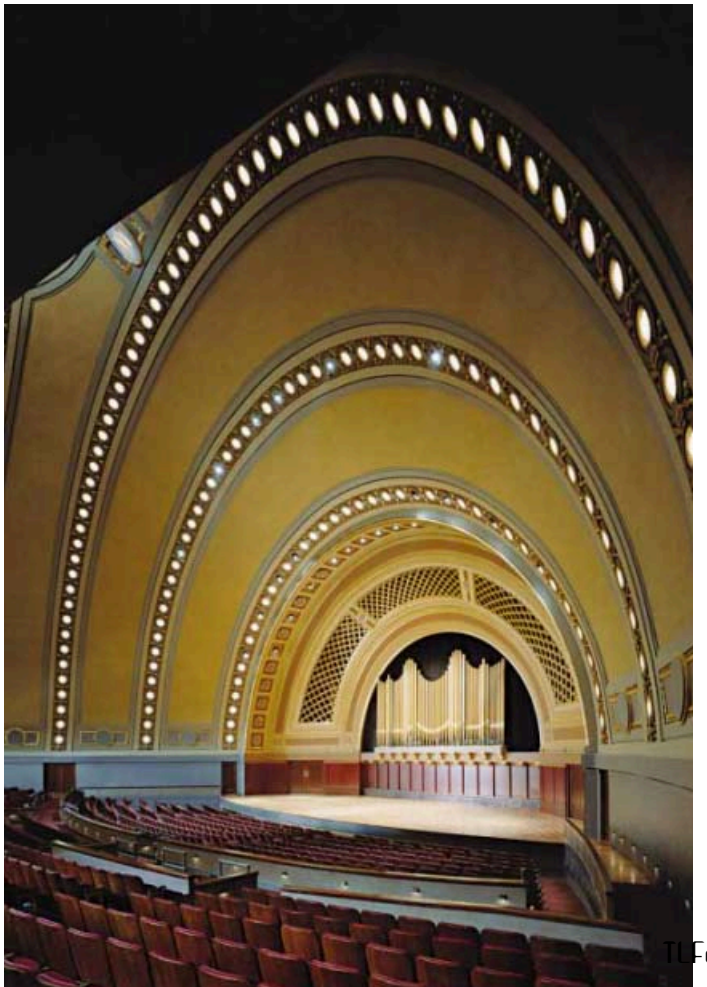


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**6. Hill Auditorium**
*Ann Arbor, Mich.*
**Architect:** *QUINN EVANS/ ARCHITECTS (restoration architect); Albert Kahn Associates (architect of record)*

The University of Michigan's Hill Auditorium is a Classical Revival work originally designed by Albert Kahn. When it opened in 1913, the acoustics of the parabolic performance hall were among the best of its day. The school engaged QUINN EVANS to restore the 3,575-seat auditorium, as well as the building's lobby, monumental stairs, and entrance plaza. It also sought to update mechanical and electrical equipment. A new lower level was created to house gallery spaces, restrooms, and HVAC equipment. This allowed for an expansion of the lobby and the addition of two elevators. A new grade-level entrance now allows handicapped access.







**"The architect played a restrained hand in the restoration of the auditorium's features."**

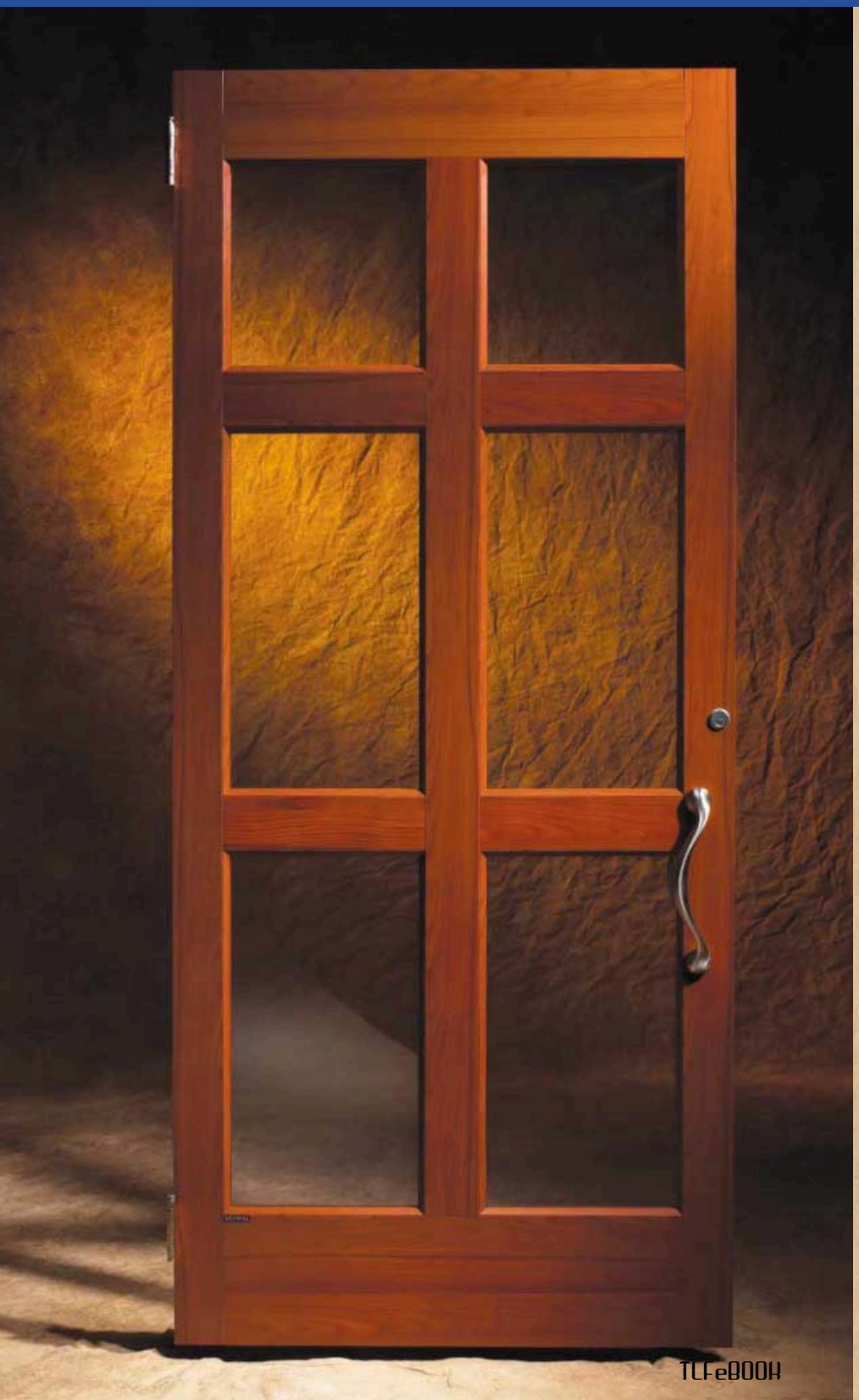
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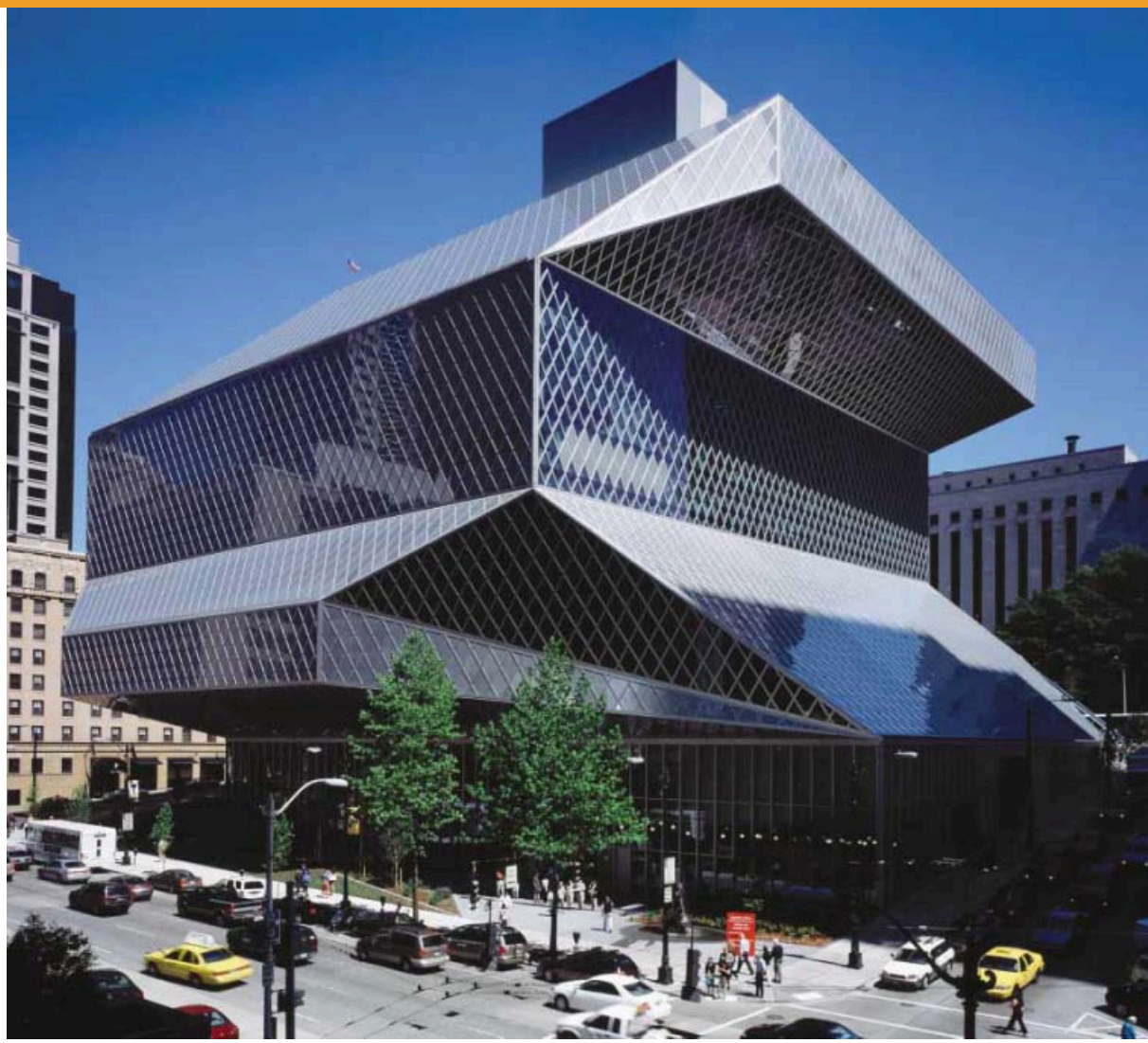
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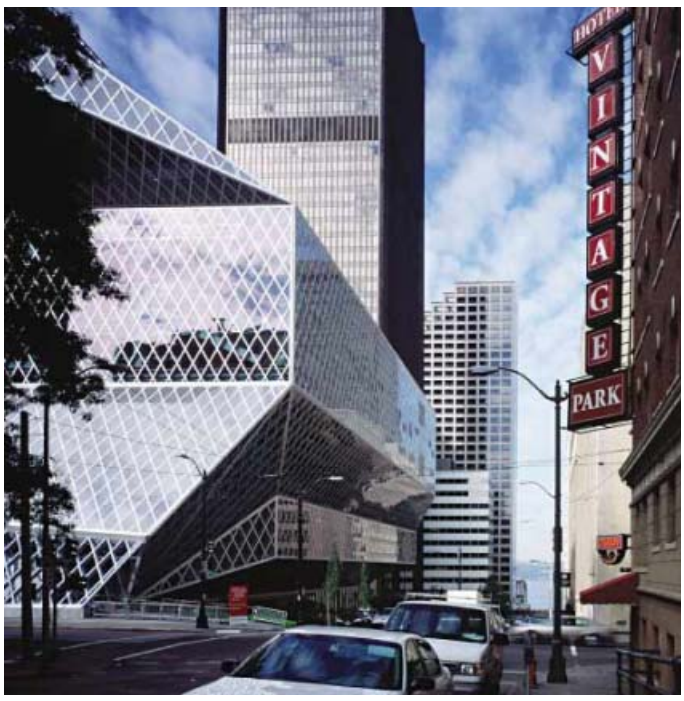
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**7. Seattle Central Library**
*Seattle*
**Architect:** *OMA/LMN—A Joint Venture [RECORD, July 2004, page 88]*

The architects sought to give each function of the library its own space, big enough to accommodate future growth, rather than creating generic, unprogrammed rooms. The main reading room, or "mixing chamber," occupies one level; offices another; and books are shelved in a "spiral" of stacks that rises through the building's middle levels. Floor plates vary in size according to the needs of each function, as well as those surrounding it. These varying sizes produce an iconic exterior defined by surfaces that slope out and in, alternately blocking and allowing daylight into the building.



**"It is really a beacon for the city."**

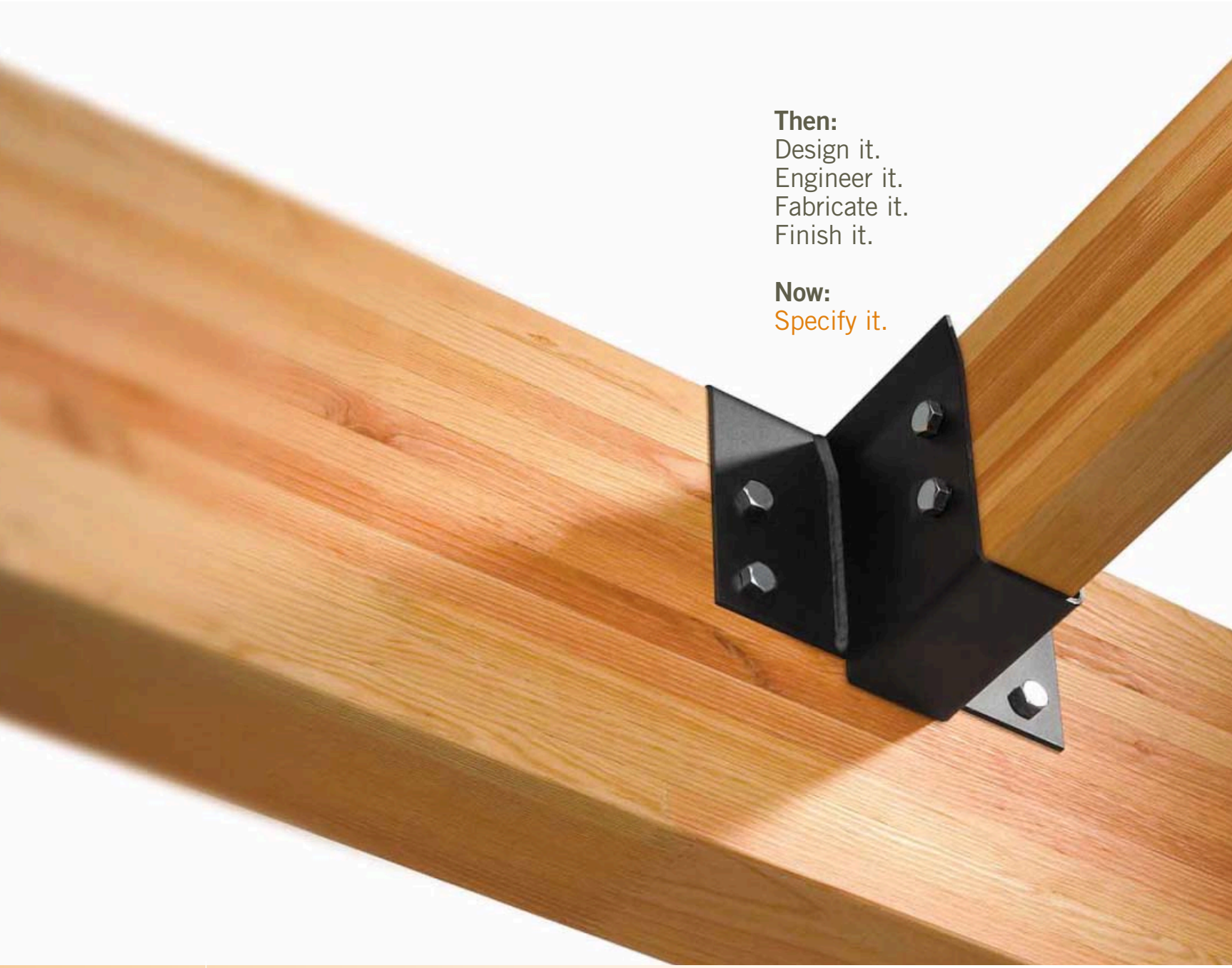





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**8. Gannett/USA Today Corporate Headquarters**
*McLean, Va.*
**Architect:** *Kohn Pedersen Fox Associates [RECORD, May 2002, page 212; November 2003, page 102]*

The architect designed this corporate headquarters to be flooded with natural light. Shaped like the letter V, its two wings reach toward a pond that doubles as a storm-water-retention basin. The building's two narrow wings mean that most offices, newsrooms, and common spaces receive ample daylight. The building's exterior is clad in lightly reflective glass that is accented by projecting glass fins, whose beveled edges refract a prismatic spectrum.

**"The detail and material resolution transcend the hierarchy of a corporation."**





**9. Jubilee Church**
*Rome*
**Architect:** *Richard Meier & Partners Architects [RECORD, February 2004, page 100]*

The architect based the proportional structure of this building on a series of circles and squares. At the church's southern end, three circles of equal radius define the profiles of the three concrete shells that compose the nave. The three shells refer to the Holy Trinity. Secular spaces are confined to the building's northern end. This rectilinear space contains a plaza and community center open to residents from the surrounding neighborhood.



**"Spectacular daylight: dappled, kinetic, openness in spirit. The quality of the light is breathtaking."**

PHOTOGRAPHY: © TIMOTHY HURSLEY (TOP); SCOTT FRANCES/ESTO (BOTTOM)



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**10. Shaw House**
*Vancouver*
**Architect:** *Patkau Architects*
*[RECORD, April 2002, page 95]*

Zoning limited the width of this 3,071-square-foot house to just over 26 feet, so the architect organized spaces vertically: Living areas are grouped at grade level; a music room is located below grade; and private spaces are located above grade. A lap pool runs along one side of the house above grade, reflecting light into lower levels through clerestory windows. The house is constructed of reinforced concrete, left exposed or insulated and clad with painted gypsum board.

**"The water is a thematic strain that ties the house together with spectacular views over Vancouver."**

**11. Mill City Museum**
*Minneapolis*
**Architect:** *Meyer Scherer & Rockcastle*
*[RECORD, February 2004, page 122]*

Touted as the world's largest mill when it opened in 1880, this building—once home to General Mills and Betty Crocker—fell into disuse and was gutted by a 1991 fire. Preservations saved the mill and sought an adaptive reuse for it. The architect inserted a glass-enclosed museum and office spaces into the ruined exterior walls, creating a pastiche of old and new, opening a porous visual connection to the Mississippi River.

**"A complex and intriguing social and regional story that reveals itself as the visitor progresses through the spaces."**





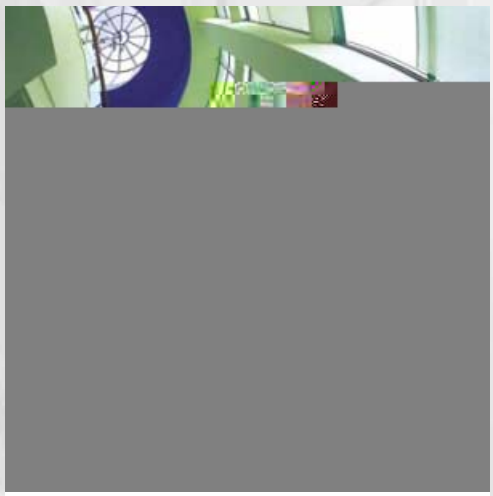
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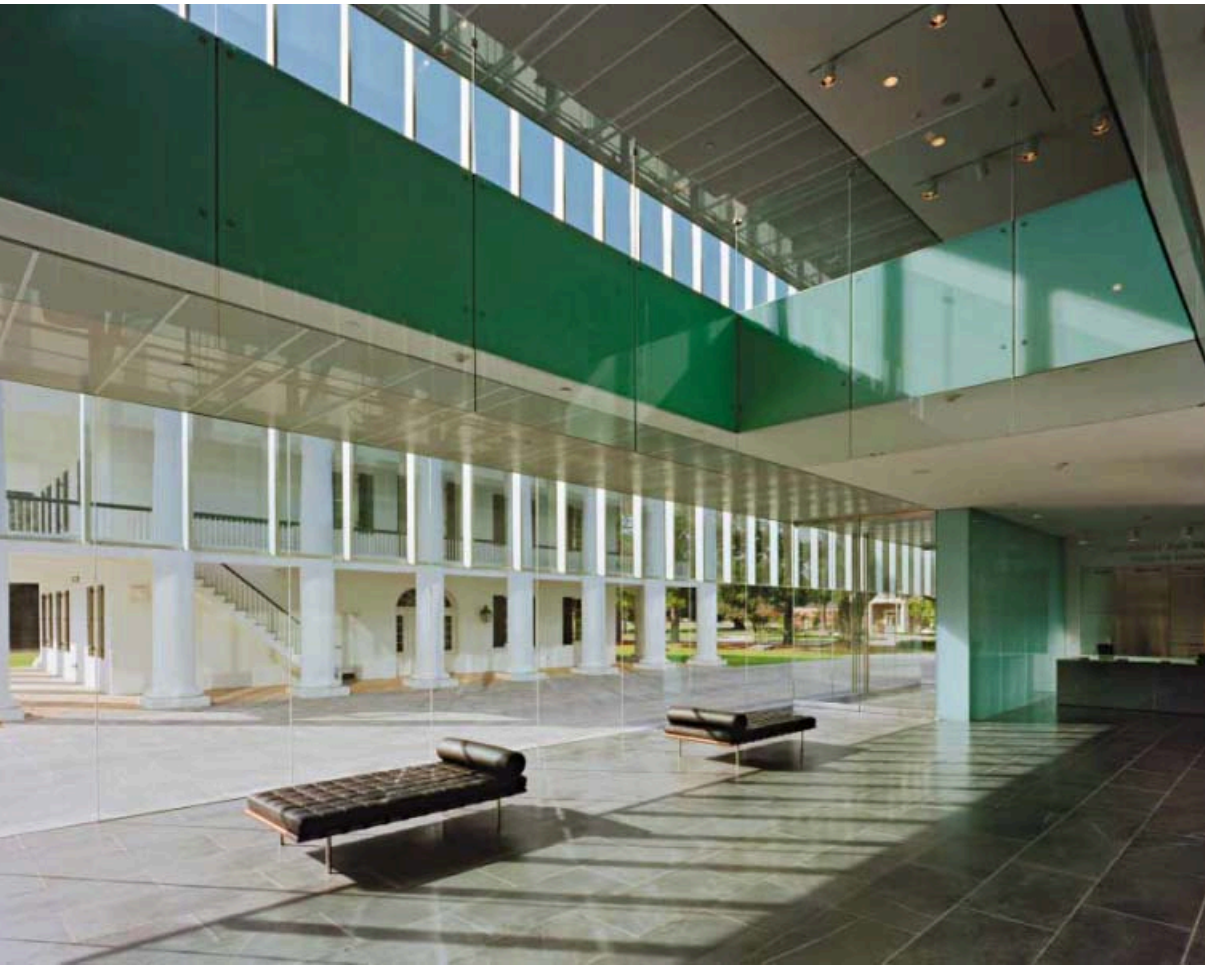
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# INTERIORS



**1. Paul and Lulu Hilliard University Art Museum**
*Lafayette, La.*
**Architect:** *Eskew+Dumez+Ripple*

The new Paul and Lulu Hilliard University Art Museum, a lustrous steel-and-glass structure, is situated adjacent to the University of Louisiana's original museum, a 1960s-era building modeled after antebellum plantation homes. The new museum's glass facade allows views deep into its interior. The connection between indoors and outdoors is reinforced by honed cordosa limestone paving that continues from an outdoor plaza into the ground-floor lobby and up a staircase into an atrium gallery. Glass railings maintain the feeling of openness in the atrium. Gallery spaces are finished minimally with wood floors and painted drywall.





**"The gutsy site plan creates a dynamic dialogue between buildings that engages the interiors outward."**

PHOTOGRAPHY: © TIMOTHY HURSLEY



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"This is a great place to test eyewear—there's a lot to look at."



**2. l.a.Eyeworks Showroom**
*Los Angeles*
**Architect:** *Neil M. Denari Architects*

Like most fashions, eyeglass styles come and go. l.a.Eyeworks, a retailer that specializes in cutting-edge eyewear, wanted a showroom that could successfully accommodate ever-changing trends while providing the retailer with a fixed spatial identity. In organizing the space, a 1,500-square-foot rectangle, the architect suspended a continuous, undulating panel from the ceiling, spanning the rectangle's long axis, to create a strong visual link from the front entrance to the back sales counter. Display shelves line one wall of this axis, while vacuum-formed panels line the opposite wall and provide a flat background for customers' movement through the store.

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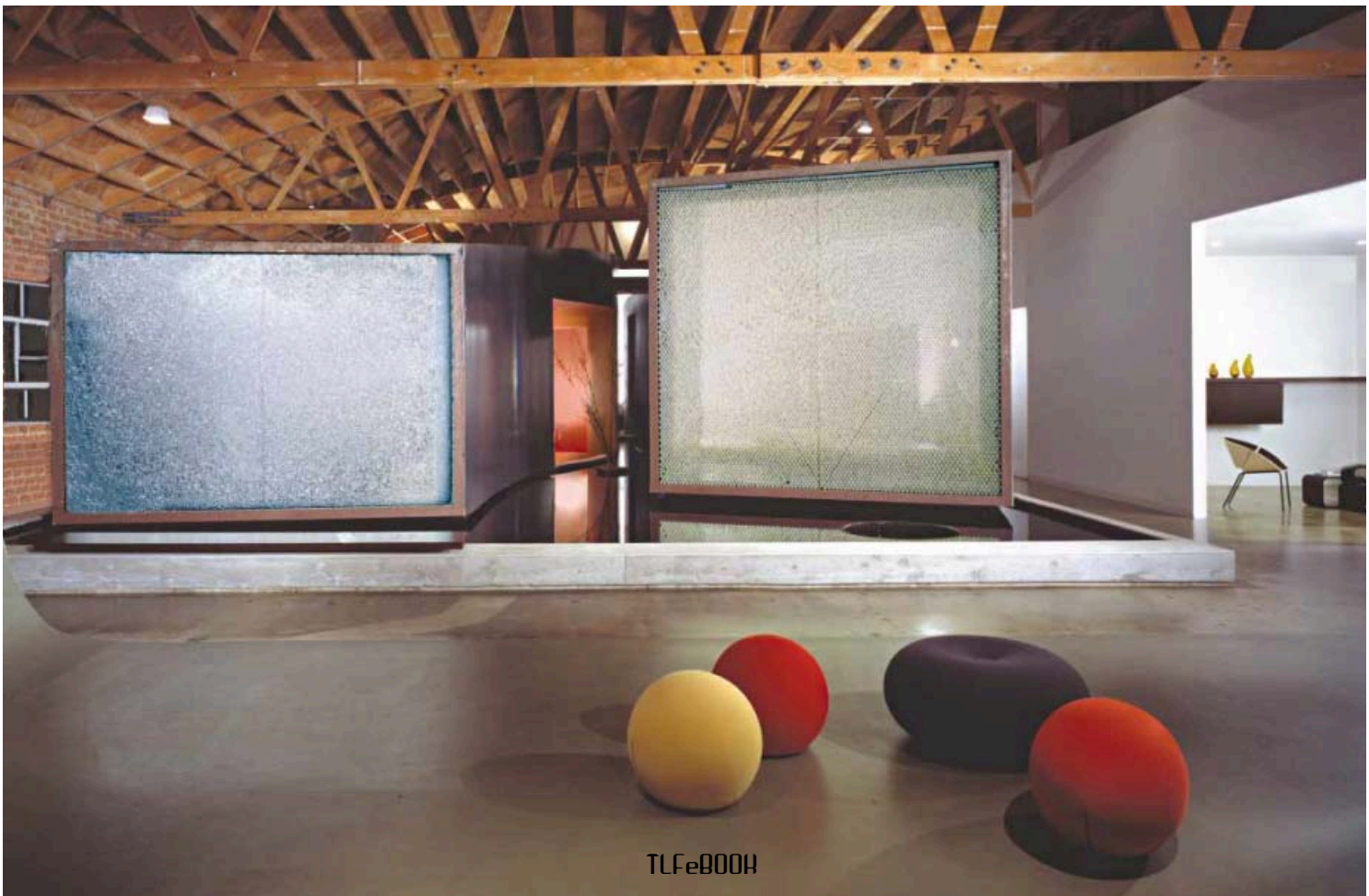




**3. Jigsaw**
*Los Angeles*
**Architect:** *Pugh+Scarpa Architects*

Film editing requires small, dark rooms free from distraction; paradoxically, a film-editing company also needs a stimulating work space to foster social interaction among employees and with clients. The architect succeeded in meeting both challenges inside a featureless, 5,000-square-foot warehouse. The small studio spaces are contained within large interior public areas. Incorporating the client's program of offices, library, socializing zones, and music and editing rooms, the design uses interior walls of unique materials to create new and unexpected pubic and private spaces.

**"The materiality is intriguing and inventive. This would make a great party space!"**



PHOTOGRAPHY: © MARVIN RAND

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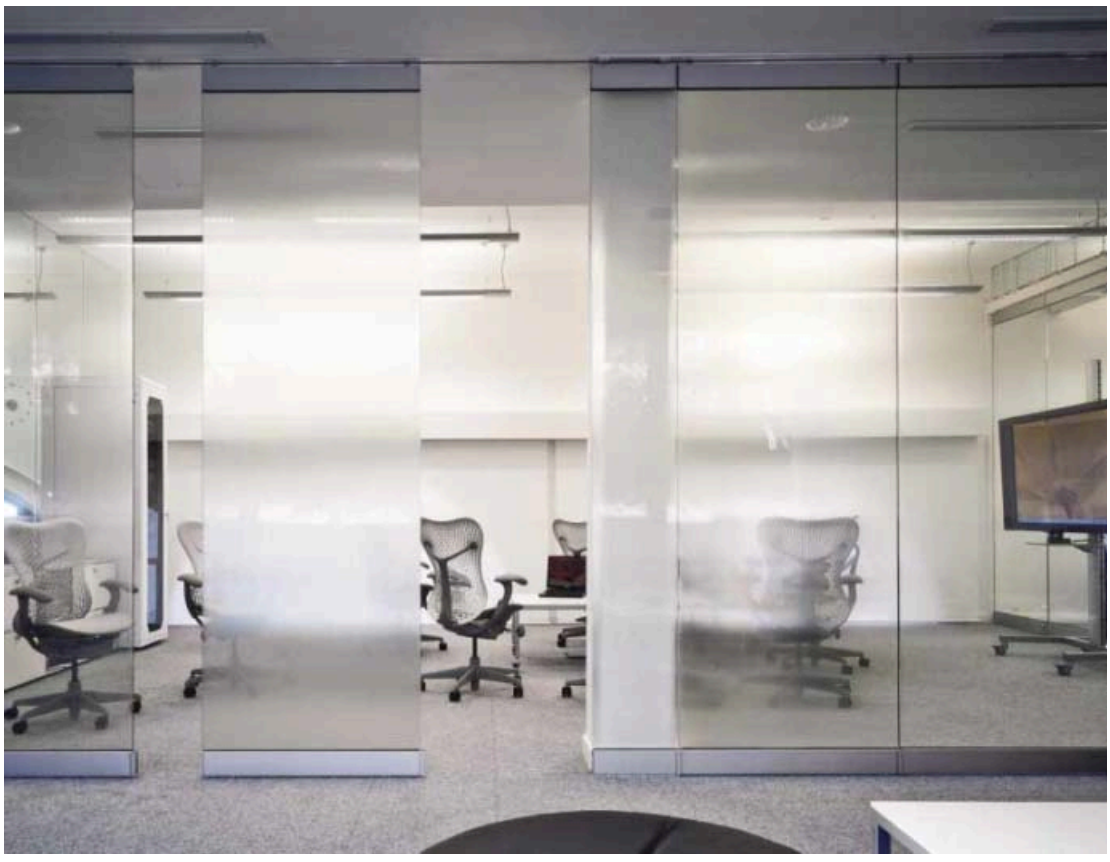




"The illusion and abstraction of London fog carries the project."

**4. AM International**
*London*
**Architect:** *Elliott + Associates Architects*

For its regional headquarters in London, Ackerman McQueen International, a U.S.-based advertising agency, wanted an office that its clients could easily reconfigure. Inspired by London's famous fog—and the suggestion of creativity and ideas emerging from fog—the architect organized this 1,800-square-foot office around a large conference room that is enclosed by sliding glass walls. The glass affords optical and acoustical privacy, and when viewed from different angles, it possesses both translucent and transparent qualities. Movable furniture allows clients to create their own seating arrangements, while permanent workstations are located at the edges of the floor plate.



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**5. Elie Tahari Fashion Design Office and Warehouse**
*Millburn, N.J.*
**Architect:** *Voorsanger Architects*

The client, a fashion designer, wanted to transform an office building located amid a drab landscape of factories and parking lots. To introduce light and nature into the 20,000-square-foot building, the architect created two interior courtyards—containing river birch and bamboo groves—by cutting through the ceiling and concrete floor slab. Glass walls line these courtyards, which are located on the same axis, allowing people to see into both spaces simultaneously and blurring the distinction between interior and exterior. Around the building's perimeter walls, a suspended white scrim emits filtered light and helps soften views of the dull surroundings.



**"This project takes a banal existing building type and, with a few deft moves, layers public space, courtyards, offices, and industrial space."**

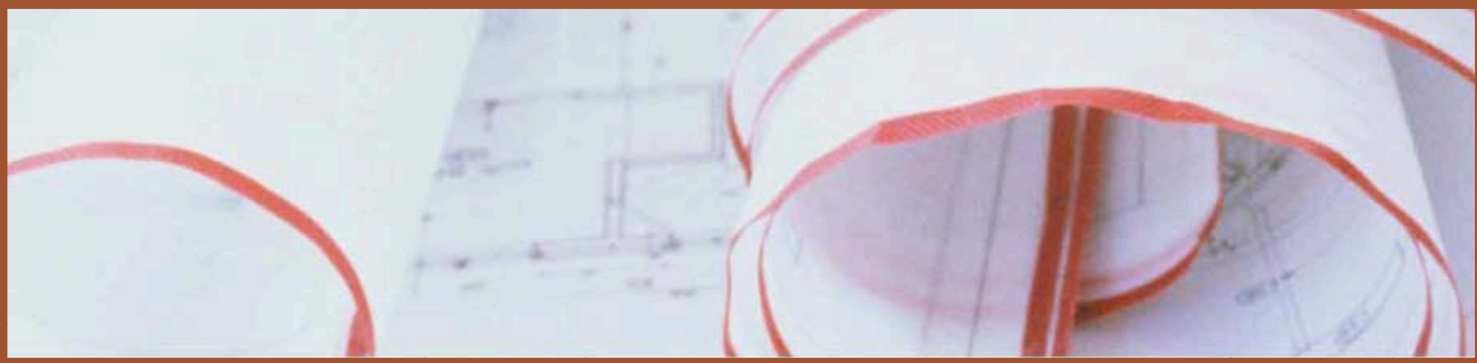








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"The interwoven antique silk ribbons bring a museum quality to the materials."



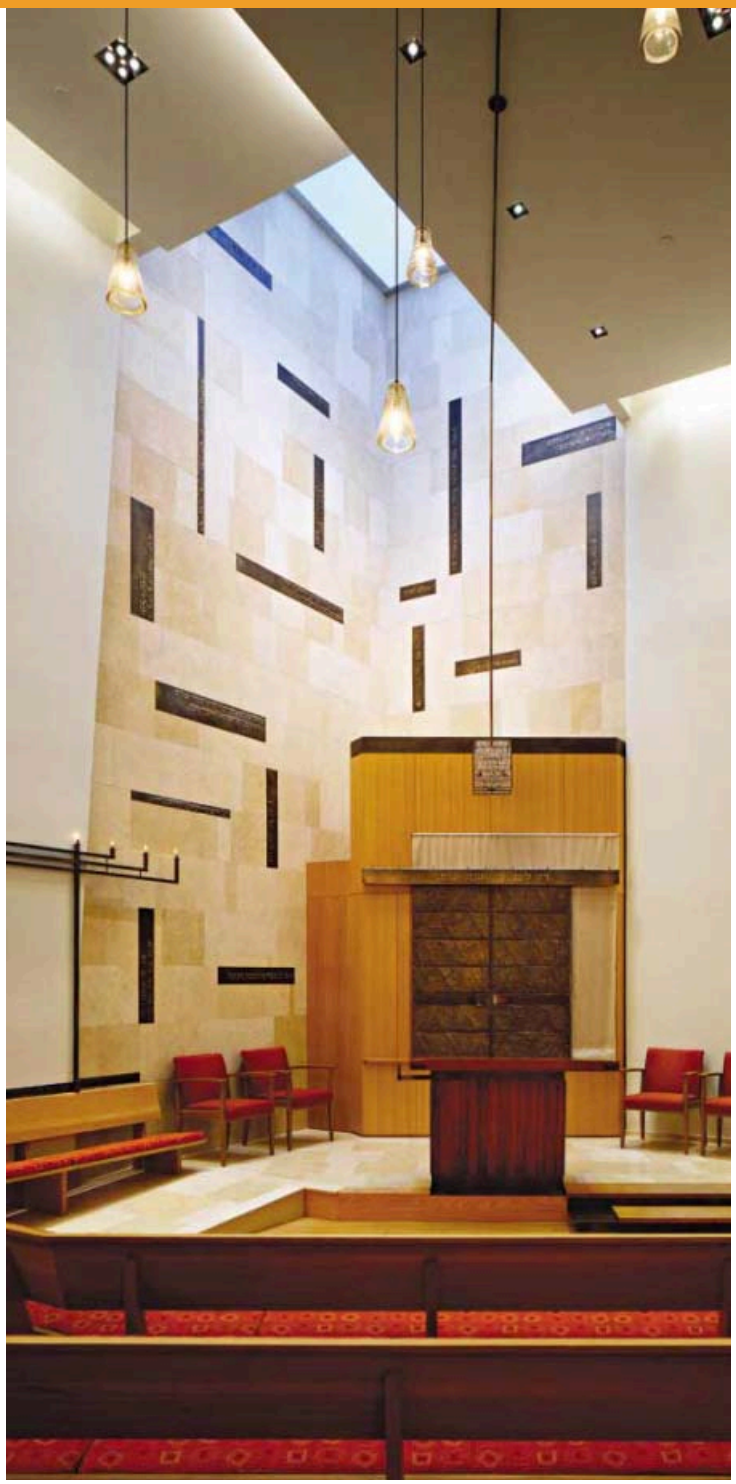
**6. Chanel, rue Cambon**
*Paris*
**Architect:** *Peter Marino + Associates Architects; Vigneron Architects (associate architect)*

An expansion and redesign of Coco Chanel's original boutique, the store now encompasses 8,000 square feet in three adjoining buildings. The old space is linked to the new by a staircase, at the top of which is a floor-to-ceiling video wall that showcases Chanel's ready-to-wear collection. The architect weaved the fashion designer's aesthetic into finishes throughout the store. In homage to Chanel's iconic tweed pattern, gold threads highlight carbon-fiber wall panels, while poured-resin panels are inset with diamond dust. Antique silk ribbons, the only remaining original materials from the Coco Chanel archive, are woven into room dividers.

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**"It's like a piece of jewelry in its attention to detail and custom-designed elements."**



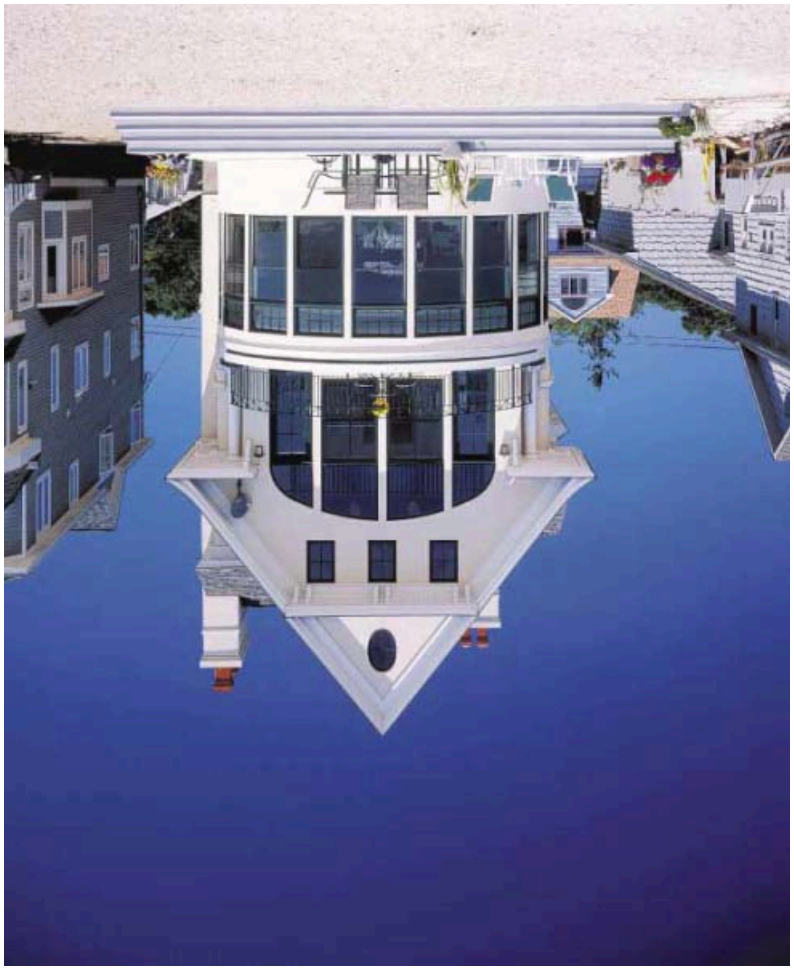

**7. East End Temple**
*New York City*
**Architect:** *BKSK Architects*

Originally designed by Richard Morris Hunt, the building was erected as a private residence in 1883. In redeveloping it for the East End Temple, BKSK Architects retained an elegant library at the building's street side but, in the rear, carved out a multistory volume for the religious sanctuary. The space is cubic and follows proportions described in the Book of Exodus. Above the Torah ark, the ceiling was pulled apart and inset with a skylight, flooding the room with daylight and symbolizing divine presence. Bronze panels engraved with prayers line the walls, recalling the prayers that Jews insert into Jerusalem's Western Wall.

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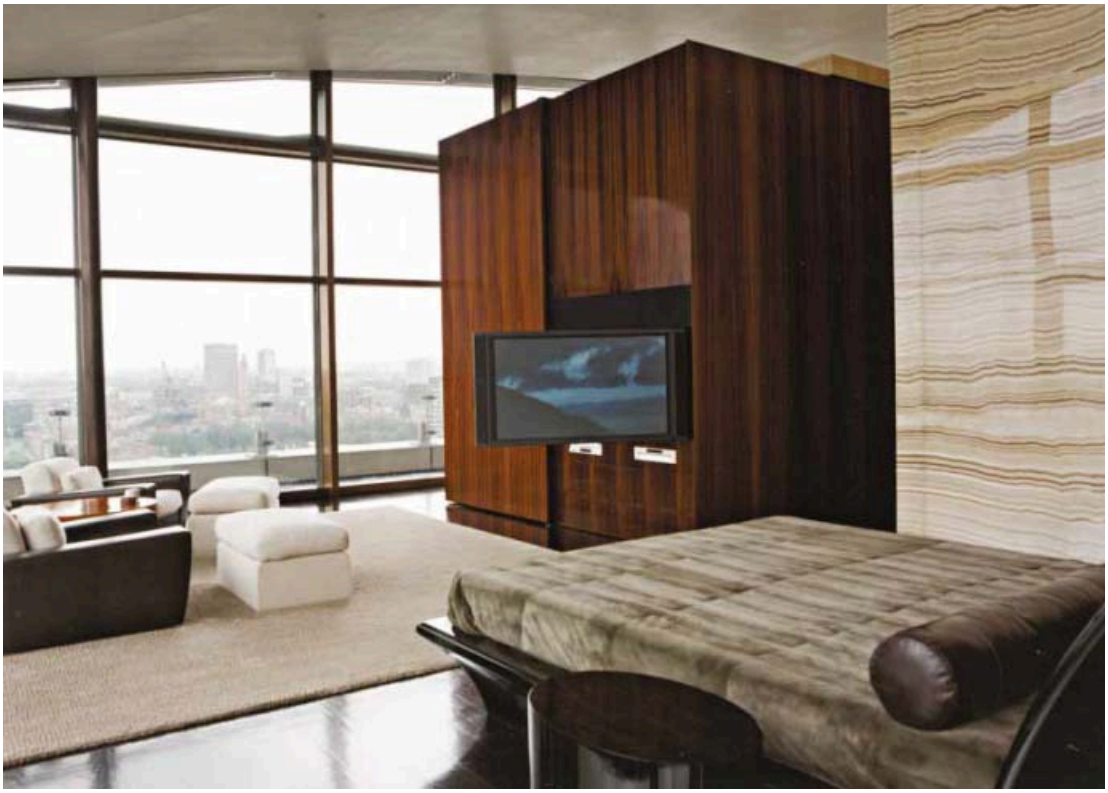
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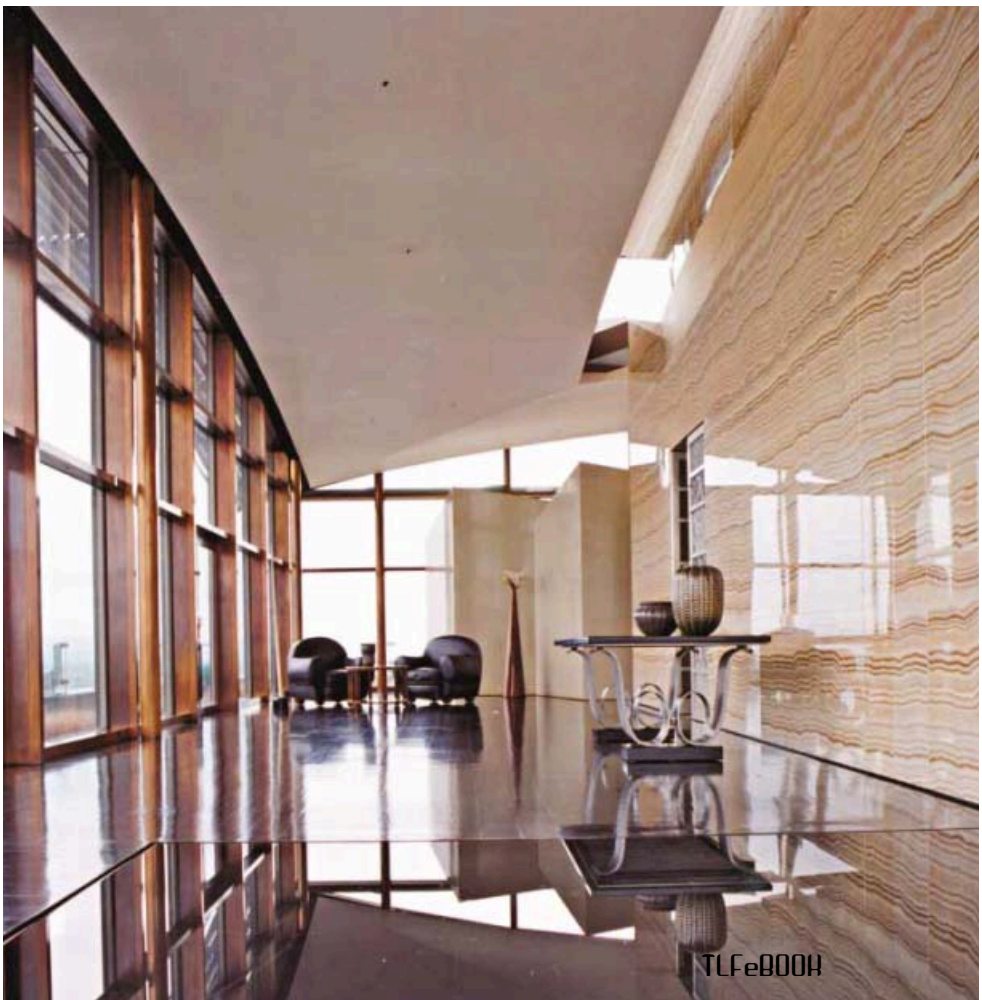


**8. Pavilion in the Sky**
*London*
**Architect:** *Peter Marino+ Associates Architects*

The architect designed this 4,800-square-foot residential penthouse for a collector of Modern art. Conceived of as a "pavilion in the sky," the glass-enclosed box represents an exploration of geometry and precious materials. The space is centered on a shimmering cube of onyx that surrounds the building's mechanical core. From the core, a stone entry hall progresses through doors, paneled with Lalique crystal, and emerges into an interior landscape, filled with sculptural objects that mark private areas of the residence.

PHOTOGRAPHY: © J.P. MASCLET

**"It's sensationally over-the-top and fantastic—wow!"**





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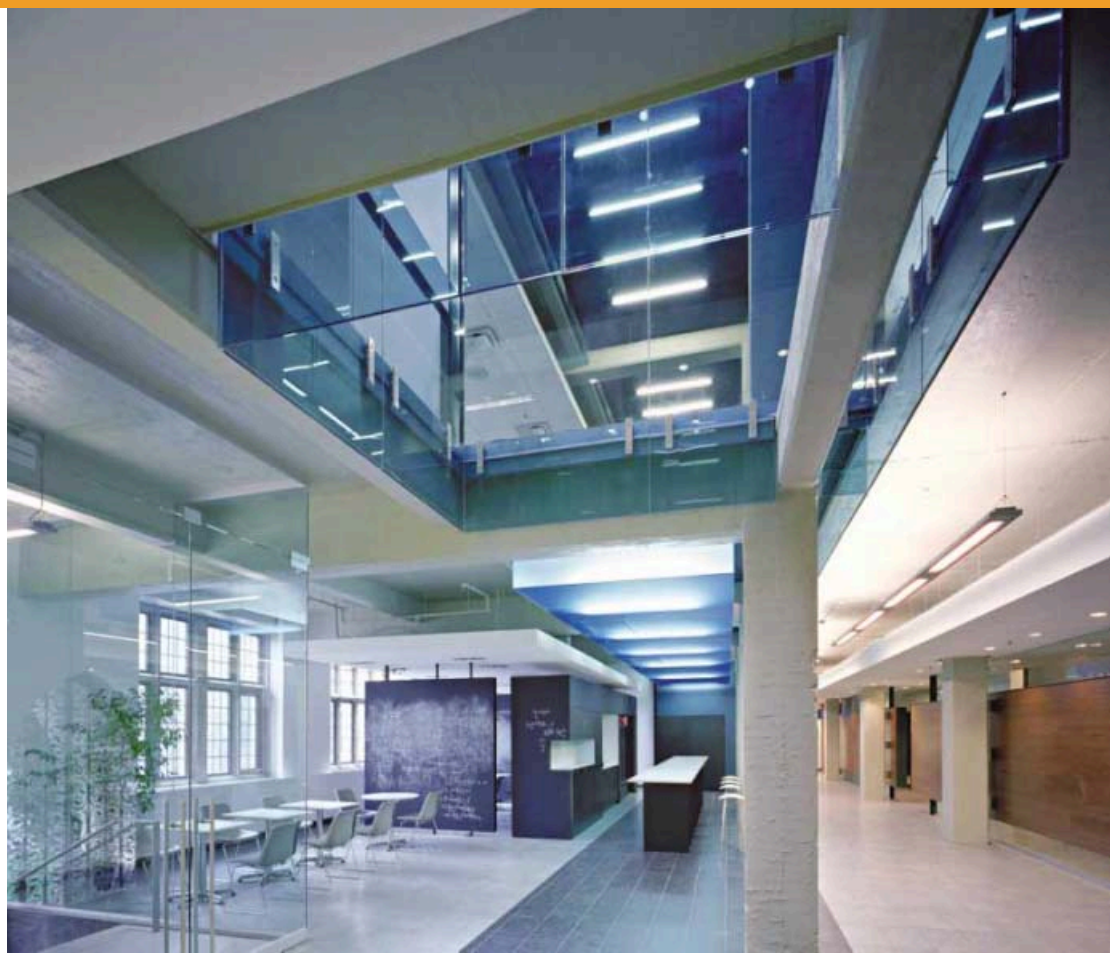
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**9. James Stewart Centre for Mathematics**
*Hamilton, Ontario*
**Architect:** *Kuwabara Payne McKenna Blumberg Architects*
*[RECORD, September 2004, page 148]*

Opened in 1929 to house McMaster University's science department, this neo-Gothic building was converted into a student center in the 1960s. More recently, an alumnus donated funds to transform the building once again—this time into a mathematics center. The architect inserted an abstract and Modern interior into the building's Gothic envelope. Private offices are located around the perimeter walls, while oversize corridors contain blackboards, tables, and seating to encourage socializing. A new, four-story atrium, topped by skylights, draws light down through the building's heart.



**"This is a bold insertion into the structural frame of a Collegiate Gothic building."**

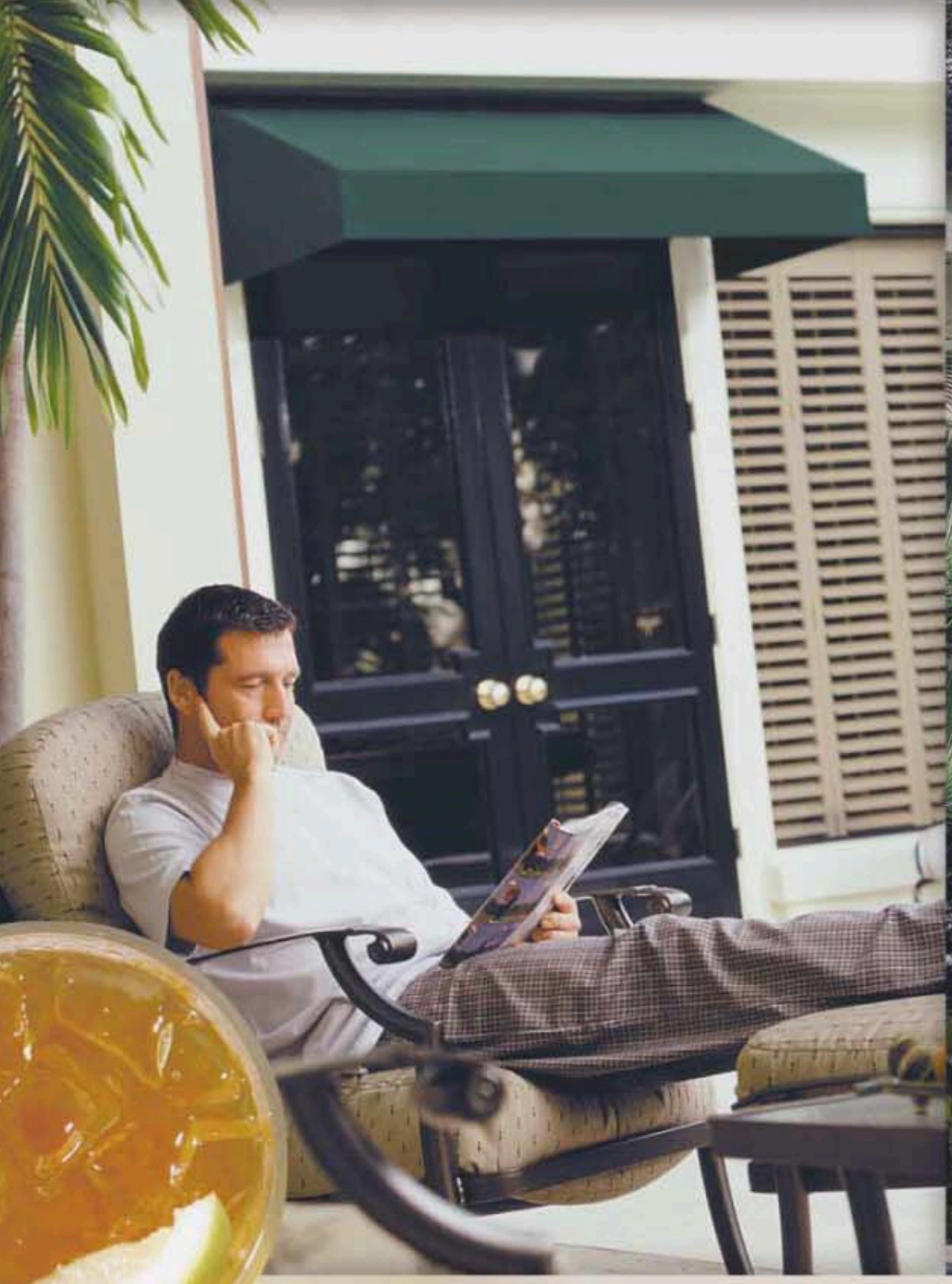






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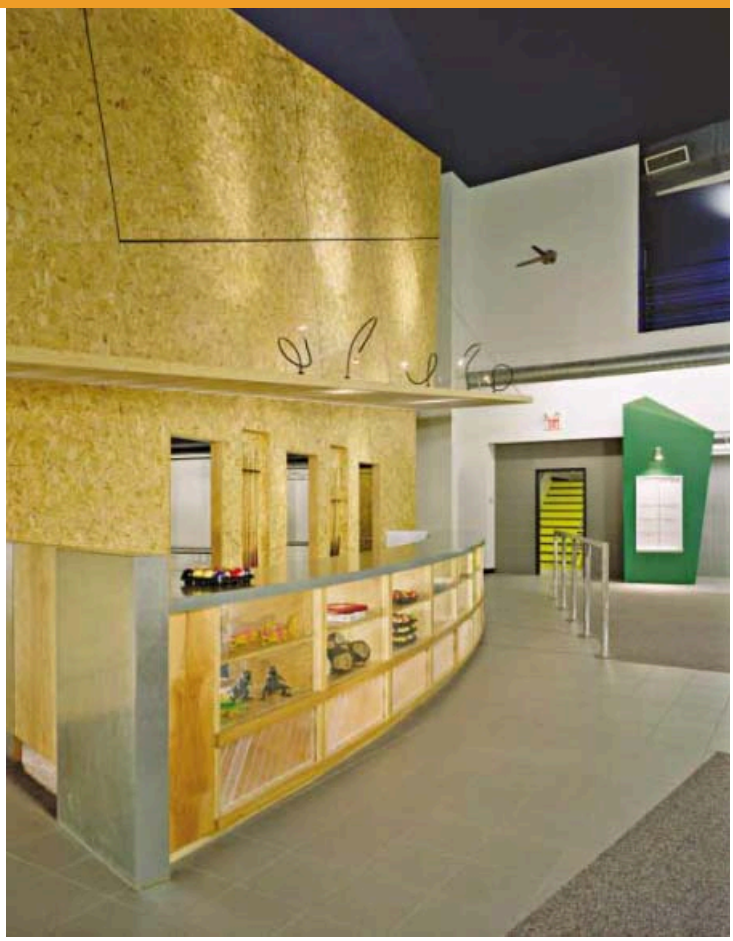
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**10. Boys Club of Sioux City**
*Sioux City, Iowa*
**Architect:** *Randy Brown Architects [RECORD, December 1997, page 60]*

The Boys Club wanted to freshen the look of its building, a former armory that it has occupied since the 1950s; boys who use the club for recreation wanted "cool stuff." Most interior walls were left unchanged, but floors and ceilings were stripped to reveal original wood and plaster finishes. The architect added a new palette of tile, plywood, and chain link. Structural elements were revealed and treated sculpturally to create "jungle gyms for the mind and body."





**"It's a very tactile building; it says, 'touch, climb, swing, fall.' "**

**"The new work has equal integrity to the original building—it's extraordinarily refined."**





**11. Hyde Park Bank**
*Chicago*
**Architect:** *Florian Architects [RECORD, March 2005, page 136]*

Over the years since the building opened in 1929, Hyde Park Bank's main hall was partitioned into smaller spaces, defined by dark, banal materials that obscured its rich original finishes. The restoration architect removed this clutter and returned the banking hall to its former grandeur. In defining new volumes, it inserted sleek contemporary fixtures forged from translucent and light materials that complement the original Classical aesthetic. A new teller counter, for instance, is composed of travertine and glass.

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# URBAN DESIGN



**1. Battery Park City Streetscapes**
*New York City*
**Architect:** *Rogers Marvel Architects*

A proliferation of Jersey barriers installed after September 11, 2001, continue to make parts of Battery Park City, to the west of the World Trade Center site, feel like a war zone. This plan will reclaim pedestrian areas by replacing the barriers with concealed traps that will prevent explosive-laden vehicles from getting too close to buildings.



**"Provides open space rather than barricading public space."**

**2. Cady's Alley**
*Washington, D.C.*
**Architects:** *Sorg and Associates; Frank Schlesinger Associates; McInturff Architects; Martinez & Johnson Architecture; Shalom Baranes Associates Architects; The Fitch Studio (landscape)*

In the heart of Georgetown, 18 small warehouses sat vacant along Cady's Alley, which runs parallel to the main commercial corridor of M Street. The architects redeveloped these buildings for retail and residential use. They also inserted two midblock connections to M Street and reinvigorated the alley for pedestrians.



**"A sensitive intervention which breathes life into a historically significant urban fabric."**




**3. City of Santa Cruz Accessory Dwelling Unit Program**
*Santa Cruz, Calif.*
**Architect:** *RACESTUDIOS*

Facing a land shortage and ongoing growth pressure, Santa Cruz, California, formulated the ultimate plan for urban infill. It provides homeowners with blueprints for prototype homes that can be constructed in backyards or above existing garages—accessory dwelling units that increase neighborhood density in an almost invisible way.

**"An innovative way to increase density while maintaining the scale of the neighborhood."**

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**4. Riparian Meadows, Mounds and Rooms: Urban Greenway for Warren, Arkansas**
*Warren, Ark.*
**Architect:** *University of Arkansas Community Design Center*

This project combines ecological restoration with the creation of recreation spaces for a depressed, rural community of 6,500 people. By removing man-made barriers along the Town Branch Creek, engineers will restore the river's natural flood plain, allowing storm water to dissipate safely and creating open space for waterside parks.





**"Combines community assets with the natural environment."**



**"There's great promise of revitalizing the Anacostia neighborhood."**

**5. Anacostia Waterfront Initiative Framework Plan**
*Washington, D.C.*
**Architect:** *Chan Krieger & Associates*

Left off tourist maps and ignored even by locals, the Anacostia is the District of Columbia's forgotten river. The Anacostia Waterfront Initiative Framework Plan seeks to change this. Goals include cleaning up industrial pollution, increasing access to 20 miles of waterfront, and encouraging residential and commercial development in economically depressed neighborhoods nearby.





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**6. Chongming Island Master Plan**
*Shanghai, China*
**Architect:** *Skidmore, Owings & Merrill*

Chongming Island, to the north of Shanghai, China, is today largely rural—but it feels development pressure. This master plan will preserve 70 percent of the island for farming and a wildlife refuge. It also ensures that eight new cities and 40 villages will contain walkable neighborhoods accessible to public transportation.

**"There is great clarity and integration between the ecological system and the development framework."**



**7. North Allston Strategic Framework for Planning**
*Boston*
**Architect:** *Goody, Clancy & Associates*

Alarmed by Harvard University's land acquisitions in the suburb of North Allston, Massachusetts, Boston planners and residents decided to partner with the school to create a master plan that will minimize town and gown conflicts. It enables Harvard to grow, while preserving affordable housing and providing the community with new pedestrian-scaled commercial thoroughfares.

**"There was a determination by all parties over time to reach a comprehensive plan."**





**8. Jackson Meadow, Marine on St. Croix**
*St. Croix, Minn.*
**Architect:** *Salmela Architect and Coen + Partners*

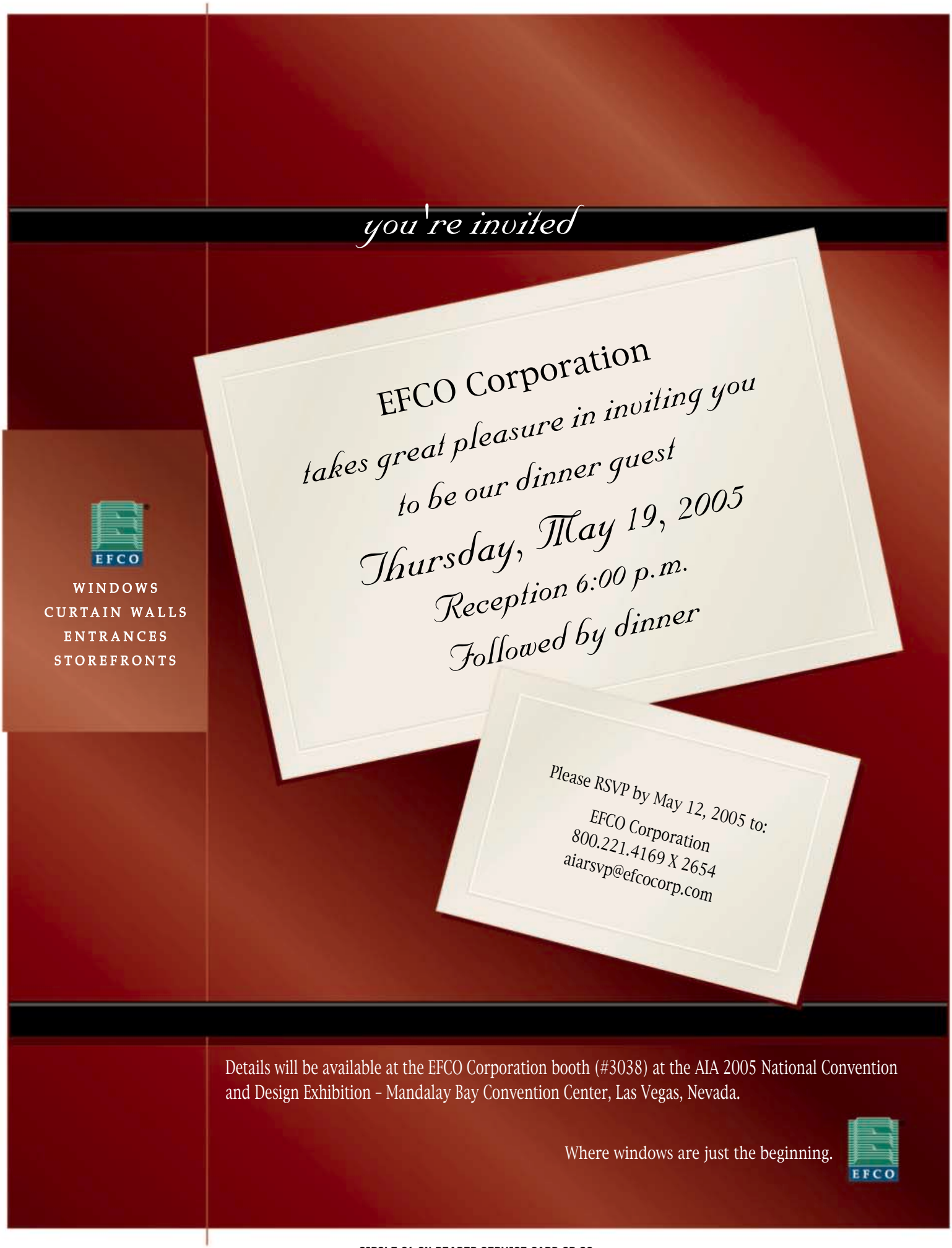
Marine on St. Croix, the oldest settlement in Minnesota, resisted development pressure until well into the 1990s. The beauty of Jackson Meadow, aside from its prairie setting, is that it incorporates the region's vernacular architecture: Its smaller-scale homes and clusters of outbuildings, such as freestanding garages, look as though they grew up along with the village.

**"Sensitive and respectful connections to the landscape and regional vernacular architecture."**

PHOTOGRAPHY: © PETER BASTIANELLI-KERZE (8)



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"Bold buildings and bold spaces in tension with each other."

**9. Northeastern University West Campus Master Plan**
*Boston*
**Architect:** *William Rawn Associates, Architects*

As Northwestern University transforms itself from a commuter school to a residential one, it is developing more than 1.2 million square feet of new residence and academic halls. Its master plan ensures that these buildings will contribute to, not withdraw from, the school's urban setting.



**10. West Harlem Waterfront Park**
*New York City*
**Architect:** *W Architecture & Landscape Architecture*

Combining neighborhood rejuvenation with economic development, this project transforms a former parking lot and rail yard into a waterfront park. Additional goals include providing West Harlem with more transportation alternatives, including ferry service, and attracting businesses to the site to create local jobs for neighborhood residents.

"Gets Harlem to its river in a simple, direct, and elegant way."





**11. Ramsey Town Center**
*Ramsey, Minn.*
**Architect:** *Elness Swenson Graham Architects in collaboration with Close Landscape Architecture*

Located in the exurban Twin Cities, Ramsey Town Center is a mixed-use development consisting of 2,500 housing units, 1 million square feet of retail and office space, and civic buildings. Its master plan ensures that development will center around a transit hub, with a network of greenways linking neighborhoods on the 320-acre site.

"A very strong city-center plan."

PHOTOGRAPHY: © STEVE ROSENTHAL (9)



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# 25 YEAR AWARD




# Louis I. Kahn's gentle masterpiece

Some 31 years after his death, Louis I. Kahn still holds our fascination. The recent documentary film about him, *My Architect*, was a great success, and his work continues to net awards. The Yale Center for British Art, Kahn's last major commission, begun in 1973 and finished by the architects Pellecchia and Meyers in 1977, is this year's AIA 25 Year Award winner. It is the fifth Kahn building recognized with the honor. This might appear excessive to some observers, but as one AIA juror remarked, "If only there were more Kahn buildings to award."

Kahn's works seem destined for an award slated for buildings that stand the test of time. Most of his designs were inspired by the bold scale and timeless geometry of ancient monuments, such as the Egyptian pyramids. Although the Center for British Art is a more intimate creation—and its exterior cladding of matte steel and glass deviates from Kahn's signature use of earthy materials such as brick and concrete—his aesthetic is unmistakable in the interior finishes, such as the glowing, honey-colored oak wall panels and travertine floors.

What truly defines the Center for British Art—a characteristic it shares with all of Kahn's buildings—is the way in which natural light fills virtually every space: flooding down from skylights, suffusing two interior courtyards, and filtering through the glass facade. Amy Meyers, the center's director, says that the layout of its circulation spaces and galleries is also symbolic. "The design is about the process of enlightenment; it lets you read the building in relation to the art," she observes. "It's a rational building. Nothing is mysterious." This might seen as an ironic statement, given the secrecy surrounding Kahn's personal life, but the enduring genius of his buildings is that they are nothing if not direct. *James Murdock*





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PHOTOGRAPHY: © RICHARD CASPOLE, EXCEPT MICHAEL MARSLAND (THIS PAGE, BOTTOM CENTER AND TOP LEFT)





**"The materiality and the language of the wood framed in stainless steel, concrete, and natural linens is still a delight for the eyes."**









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American Institute of Architects

# Winners and Jurors 2005

## WINNERS

### Architecture (page 116)

**Contemporaine at 516 North Wells:** *Perkins+Will;* **Agosta House:** *Patkau Architects;* **Conservatory of Flowers:** *Architectural Resources Group in collaboration with Tennebaum-Manheim Engineers;* **Emerson Sauna:** *Salmela Architect;* **Somis Hay Barn at the Lucky Dog Ranch:** *SPF:a;* **Hill Auditorium:** *Quinn Evans/Architects (restoration architect); Albert Kahn Associates (architect of record);* **Seattle Central Library:** *OMA/LMN—A Joint Venture;* **Gannett/USA Today Corporate Headquarters:** *Kohn Pedersen Fox Associates;* **Jubilee Church:** *Richard Meier & Partners Architects;* **Shaw House:** *Patkau Architects;* **Mill City Museum:** *Meyer Scherer & Rockcastle;* **Holy Rosary Catholic Church Complex:** *Trahan Architects;* **Mountain Tree House:** *Mack Scogin Merrill Elam Architects*

### Interiors (page 130)

**Paul and Lulu Hilliard University Art Museum:** *Eskew+Dumez+Ripple;* **I.a.Eyeworks Showroom:** *Neil M. Denari Architects;* **Jigsaw:** *Pugh+Scarpa Architects;* **AM International:** *Elliott + Associates Architects;* **Elie Tahari Fashion Design Office and Warehouse:** *Voorsanger Architects;* **Chanel, rue Cambon:** *Peter Marino + Associates Architects; Vigneron Architects (associate architect);* **East End Temple:** *BKSK Architects;* **Pavilion in the Sky:** *Peter Marino + Associates Architects;* **James Stewart Centre for Mathematics:** *Kuwabara Payne McKenna Blumberg Architects;* **Boys Club of Sioux City:** *Randy Brown Architects;* **Hyde Park Bank:** *Florian Architects*

### Urban Design (page 146)

**Battery Park City Streetscapes:** *Rogers Marvel Architects;* **Cady's Alley:** *Sorg and Associates; Frank Schlesinger Associates; McInturff Architects; Martinez & Johnson Architecture; Shalom Baranes Associates Architects; The Fitch Studio (landscape);* **City of Santa Cruz Accessory Dwelling Unit Program:** *RACESTUDIOS;* **Riparian Meadows, Mounds and Rooms: Urban Greenway for Warren, Arkansas:** *University of Arkansas Community Design Center;* **Anacostia Waterfront Initiative Framework Plan:** *Chan Krieger & Associates;* **Chongming Island Master Plan:** *Skidmore, Owings & Merrill;* **North Allston Strategic Framework for Planning:** *Goody, Clancy & Associates;* **Jackson Meadow, Marine on St. Croix:** *Salmela Architect and Coen + Partners;* **Northeastern University West Campus Master Plan:** *William Rawn Associates, Architects;* **West Harlem Waterfront Park:** *W Architecture & Landscape Architecture;* **Ramsey Town Center:** *Elness Swenson Graham Architects in collaboration with Close Landscape Architecture*

### 25 Year Award (page 152)

**The Yale Center for British Art:** *Louis I. Kahn*

### Firm of the Year (page 156)

**Murphy/Jahn:** *Helmut Jahn, John Durbrow*

### Gold Medal (page 162)

**Santiago Calatrava, FAIA**

## JURORS



### Architecture

***Jury Chair***

***Thomas W. Ventulett III,*** *FAIA*

Since opening in 1968, Thompson, Ventulett, Stainback & Associates has been honored with more than 200 design awards, including the AIA Architecture Firm Award in 2002. A founding principal, Tom Ventulett now serves as chairman emeritus of its board of directors and as its design quality assurance director. He is a frequent lecturer at universities and professional organizations nationwide.

***Frank Harmon****, FAIA, Raleigh, N.C.;* ***Amira Joelson****, Assoc. AIA, New York City;* ***Brenda A. Levin****, FAIA, Los Angeles;* ***Thomas Phifer****, AIA, New York City;* ***Joseph M Valerio****, FAIA, Chicago;* ***Susan Lipka****, Houston;* ***Danielle S. Wilkins,*** *Springfield, Va.;* ***Vivian Loftness****, FAIA, Pittsburgh*



### Interior Architecture

***Jury Chair***

***Mark McInturff,*** *FAIA*

McInturff Architects was the recipient of several AIA Honor Awards, including one for urban design this year. A principal of the Bethesda-based firm, Mark McInturff has taught at the University of Maryland School of Architecture since 1980, where he was appointed Kea Professor for spring 2003. Since 1995, he has been a visiting critic at the Catholic University of America's School of Architecture and Planning.

***Judith DiMaio,*** *AIA, Old Westbury, N.Y.;* ***Karen I. Fiene,*** *AIA, Berkeley;* ***Douglas A. Garofalo, FAIA****, Chicago;* ***Nancy Tessman****, Salt Lake City*



### Regional and Urban Design

***Jury Chair***

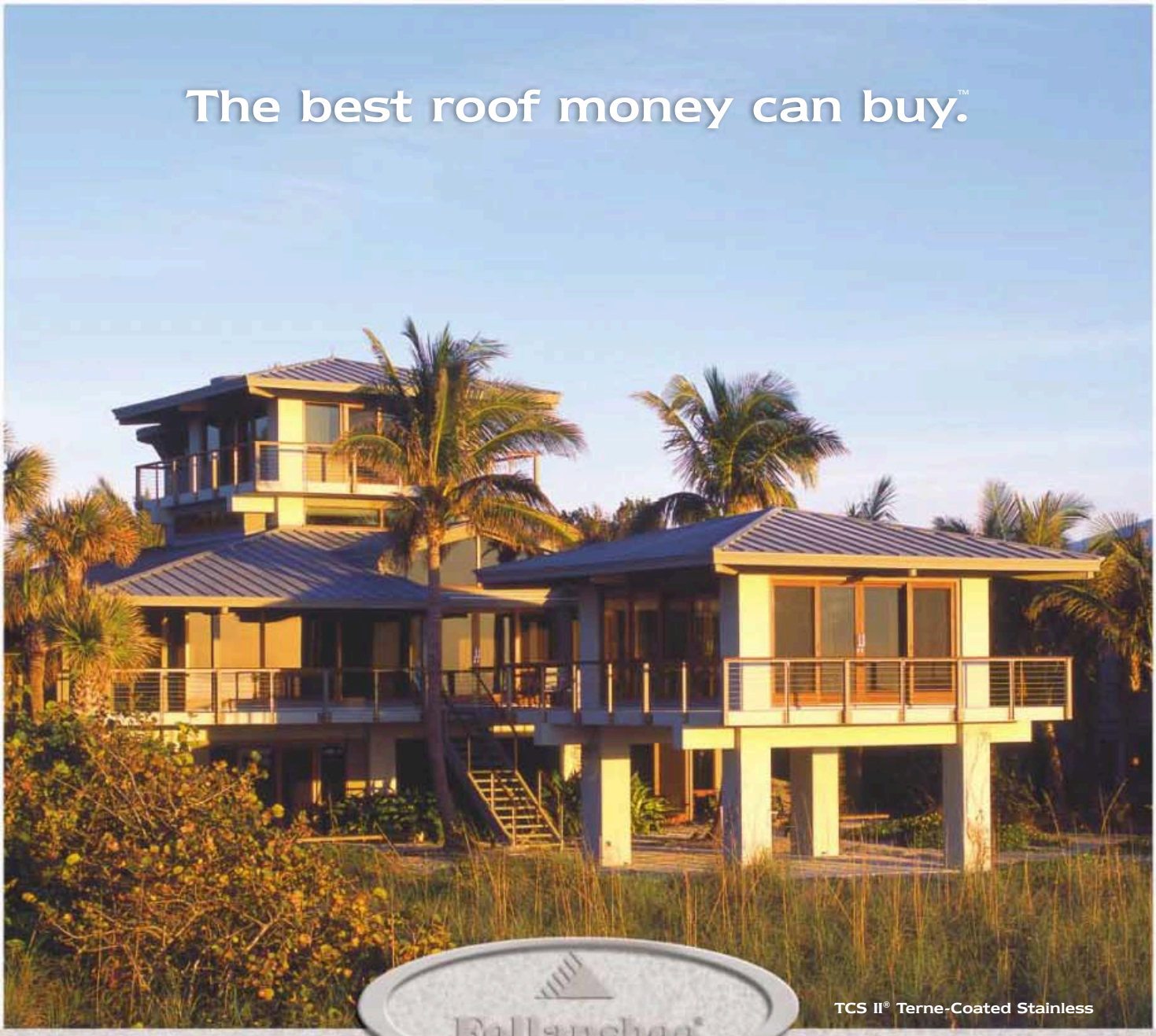
***Michael E. Willis,*** *FAIA*

Michael Willis is president and founding principal of Michael Willis Architects, an architecture, urban design, and interiors firm with offices in San Francisco and Oakland, in California, and Portland, Oregon. He remains involved in AIA San Francisco, serving as president in 1995, and is former chair of the National Organization of Minority Architects of Northern California.

***John C. Guenther,*** *AIA, St. Louis;* ***Stephen L. Quick,*** *AIA, Pittsburgh;* ***Karen Van Lengen,*** *AIA, Charlottesville, Va.*



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# FIRM OF THE YEAR AWARD



## AIA honors the futuristic vision and high energy of Murphy/Jahn

**By Cheryl Kent**

According to Chicago folklore, Mayor Richard J. Daley (father of the current mayor) called architect Charles F. Murphy in 1967 while McCormick Place was still burning. "Charlie" the mayor said, "start drawing." Murphy's firm—then known as C.F. Murphy and now Murphy/Jahn (M/J)—did get the commission to rebuild the convention center. Gene Summers was hired to design the project, and he brought along his 27-year-old assistant, Helmut Jahn.

Murphy/Jahn was named Firm of the Year by the AIA for 2005. In two years, the office will celebrate its 70th anniversary. Since 1982, it has been under the sole proprietorship and determined leadership of Helmut Jahn.

The firm's roots in Chicago are deep (Charles Murphy worked in Daniel Burnham's office during the last year of his life), and it has contributed significant work to Chicago, providing it with some of the tough, muscular buildings for which the city is justly famous. To name two, there is McCormick Place (1970), with its massive, 19-acre roof and unique support structure; and the 1965 Richard J. Daley Center, with its 87-foot-long bays. The office continued to be the mayor's favorite and win plum jobs from the city, among them O'Hare Airport. In those days, M/J gave Skidmore, Owings & Merrill's Chicago office a run for its money even as it constructed the 100-story John Hancock Tower.

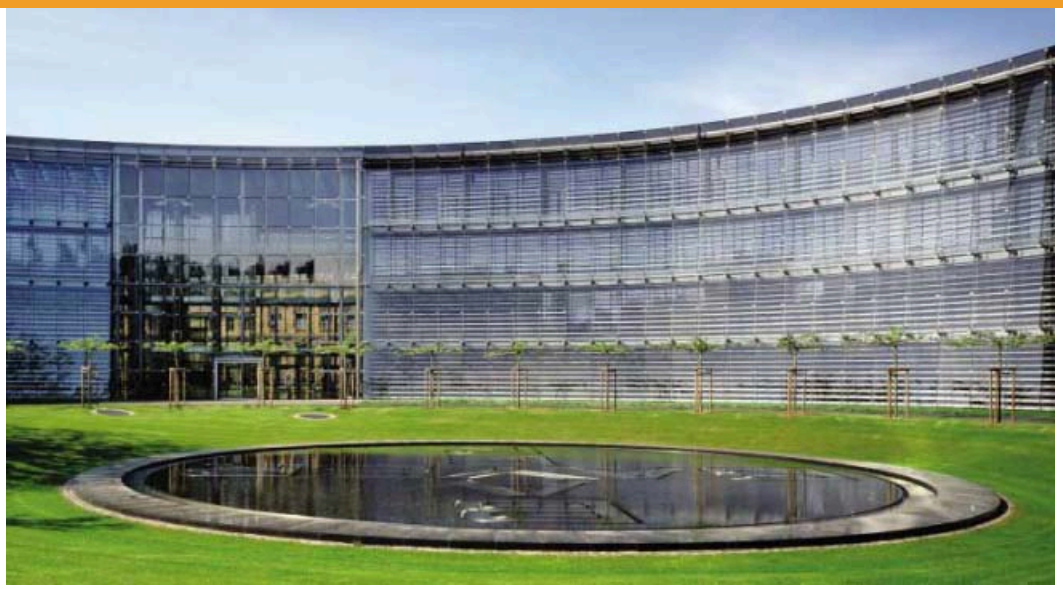
As Murphy/Jahn, the office's reach is global: In addition to the U.S., it designs projects in Europe, Asia, and Africa. The firm's work is as technically audacious as ever—although the emphasis is no longer on steel and breathtaking spans—and the architectural expression has evolved, becoming more refined in the past decade, characterized by sculptural massing and delicate glass skins. Perhaps only Jean Nouvel matches M/J's skillful and effective use of glass.

Since 2000, beginning with the Sony Center, M/J has been collaborating regularly with engineer Werner Sobek and climate designer Mathias Schuler. Jahn and Sobek have coined

*Cheryl Kent's book on Santiago Calatrava's Milwaukee Art Museum is being published in June by Rizzoli. Her book on David Hovey's work was published in 2004.*



PHOTOGRAPHY: COURTESY MURPHY/JAHN (TOP LEFT); © ROLAND HALBE (1, 2)





1. Bayer AG Konzemzentrale, Leverkusen, Germany: exterior view (left); circulation corridor (above).






2. Kaufhof Galeria, Chemnitz, Germany: transparent facade of showroom (left); bus-station loggia (above).



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a new term, *Archi-Neering*, to express the equality of their collaborative working relationship, and they released a book on the subject. "In the office," Jahn says, "no one can tell me I had a bad idea. But Werner can tell me I had a bad idea."

The collaboration has given recent work a seamless quality. With higher energy-performance standards in Europe, M/J has designed large-scale, innovative buildings using natural ventilation as the primary system. While mechanical backups assist the in extreme conditions, the elimination of conventional HVAC supports has simplified design.

Murphy/Jahn followed a logical path to its present work. During the 1970s and 1980s, the firm sought to expand architecture through technology and new materials. Its speculative office buildings of that period suffered the gaudy veneers of thin polished stone and coy historical references that everyone's did. There are the flamboyant projects like the Thompson Center in Chicago that won Jahn the name "Flash Gordon." (Defiantly, Jahn embraced the name, adopting it for his racing sailboat.) But in smaller commissions, such as the Rust-Oleum Headquarters (1978) and the Xerox Center (1980), Murphy/Jahn produced modest gems demonstrating an honest search for a path from doctrinaire Modernism to a meaningful contemporary architecture. These projects show the firm was never in danger of dead-ending on historicism nor floundering in abstract literary philosophy.

Starting his career among Chicago's titans, Jahn learned to think big. In an interview several years ago, he said pointedly, "I've designed one house in my life," and that was a gift for Murphy, who was retiring. Jahn—a man of formidable intelligence and drive—looks pragmatically at every job to push the solution past convention. In America, he celebrates the efficiency and economy with which buildings are constructed, as in the IIT Student Housing, Chicago (2003); in Europe, he revels in the freedom to experiment and the higher standards for energy saving, as in the Post Tower, Bonn, Germany (2003).

Murphy/Jahn has been an architecture boot camp for young architects, where they are worked hard and where some discover their own grit and design talent. The list of distinguished architects who worked at M/J attest to the firm's eye for talent and an ability to cultivate—albeit with very tough love—the gifted. The list of alumni includes Tom Beeby, Jacques Brownson, John Burgee, David Hovey, and Ron Krueck, among others.

The firm has been controversial, and receiving the AIA Firm of the Year Award does not acknowledge a new willingness to compromise on Murphy/Jahn's part. As evidence, one need only look to the Sony Center, Berlin (2000), the central court of which recalls the Thompson Building in Chicago—the most controversial building Jahn ever designed. Instead of repudiating the work that caused the firm its biggest headache, Murphy/Jahn has instead returned to its theme. This time, the expression is refined while retaining the original's exuberance. Sony does not feel over-the-top, as the Thompson Center does. It is this control—call it maturity—combined with an enduring appetite for experimentation that characterizes the firm's current work. ■



**3. Cologne/Bonn Airport, Cologne/Bonn, Germany: concourse (top); glass roof covering train station (middle); interior concourse (bottom).**



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**3. Cologne/Bonn Airport, Cologne/Bonn, Germany: concourse (top); glass roof covering train station (middle); interior concourse (bottom).**



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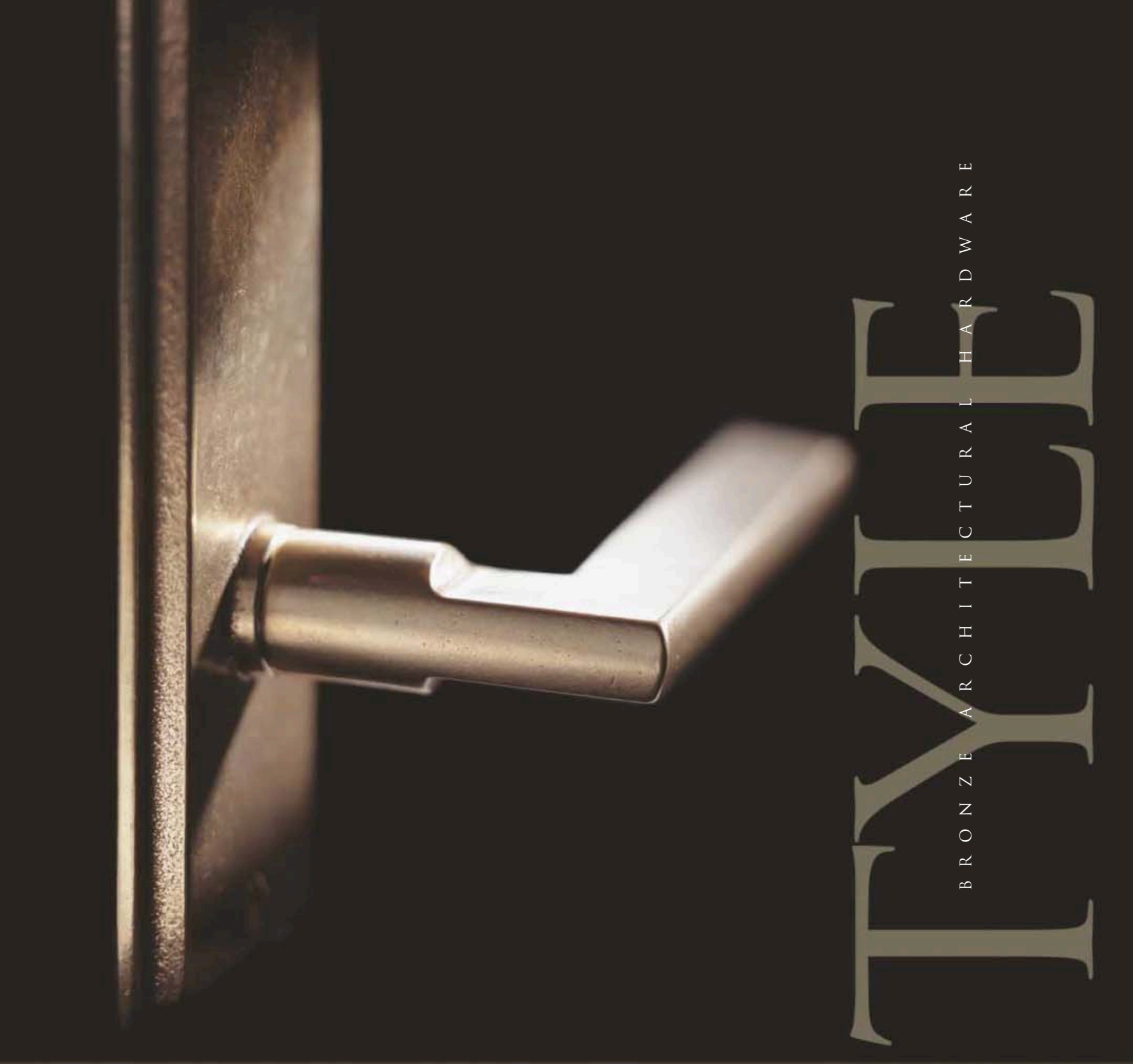
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# Calatrava Wins the Gold

After Santiago Calatrava, FAIA, was handed the 2005 AIA Gold Medal in Washington, D.C., this February, he revealed in his speech the deep, even spiritual, passion for building that has helped him create one of the most notable bodies of work in contemporary architecture. A builder, he quoted from a biblical text, "must carry out a spirit beyond human capability." Calatrava himself is the embodiment of such a worker, creating forms possessing a soulful, even heroic character, larger than life. His sculptural works simultaneously display sensual, ambitious, and poetic qualities. We feel as if we've seen his structures in our imagination and in our aspirations, but never before in reality; and it is his unyielding spirit, frozen in form, that profoundly moves ours. *Sam Lubell*

Portrait by Nathan Beck Photography





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**By Alexander Tzonis**

Less than a generation ago, the split between construction technology and cultural expression in architecture appeared to be irreversible. With the exception of a few "high-tech" buildings, mostly of limited appeal to the broader public, the humanistic unity of art and science in design looked as if it was irrevocably lost. It is remarkable how fast and unexpectedly the situation has changed. Many factors and people played a role in this reversal; without a doubt, one of the most significant contributors was Santiago Calatrava.

Calatrava's buildings, engineering projects, and furniture taken together with his drawings, sculpture, and scientific research, manifested that a genuine unity of rational intelligence with poetry is still possible; a very rare synthesis in our time. His built projects succeeded in overcoming the barriers between pragmatism, infrastructure service, and intellectual expression. They restored a general enthusiasm for the art of construction, bringing back an excitement about it long gone since the 1950s. They dispelled the bias against technology as something by definition dull. Most important, they demonstrated that utilitarian artifacts do not have to be oppressive and disruptive but can evoke delight and a sense of identity.

At first glance, Calatrava's designs look complicated and perplexing. The complexity of their configuration and the "strangeness" of their shape are born out of a commitment to facing hard design problems without compromise, without conforming to the beaten track of reductive solutions. As the Stadelhofen Railway Station in Zurich (1983–90) shows, his structures operate on two levels. On a first level, they are intelligent technological solutions to programmatic functional demands. As a result, the kernel of the form of his projects appears direct and plain. Yet on a second level, they go beyond the limited and static problem-solving kind of design. They meet head-on economic, technological, environmental, social, and cultural challenges, acquiring intricate and rich forms.

The commitment to targets beyond narrow problem-solving objectives accounts for the primacy given to motion and movement in Calatrava's projects, and as a result their manifest dynamic spatial organization. In the Milwaukee Art Museum (2001), for example, key structures contain mobile parts and articulate streamline-shaped conduits to accommodate systems of circulation. But they also imply movement appearing to have been designed to the "critical point": in engineering, the state beyond which, if a certain variable in a structure is exceeded, the interatomic bonds of its body will be broken and the structure will fly in all directions at once. Yet, there are more profound cultural, epistemological, and moral reasons explaining the perplexity raised by Calatrava's structures. In aesthetic terms, the idea of the "critical point" is translated into the idea of the "pregnant moment," the figure that represents through its form both past and future states of a body. We can see that clearly in most of his bridges: in the bent arch of the Volantin Footbridge in Bilbao (1990–97) or the leaning pylon of the Alamillo (1987–92) or the Light Rail Train Bridge in Jerusalem (begun in 2002). In other words, the structure appears to capture the moment as if falling, but it is not; it seems to be rising, but it is not. Almost all of Calatrava's projects combine into one figure these two apparently contradictory states of a structure, leaning on the brink of imminent collapse and on the verge of standing up.

After having gone to so much effort to reach the satisfactory technological ends to make the structure optimally lasting and durable, Calatrava appears to enjoy and exploit, like an acrobat or a dancer, this state of suspense. One can also claim that he wants the user of his works equally to enjoy it. The question is how, and perhaps more important why, so many people experience the same enjoyment. The answer seems to be that Calatrava in these dynamic structures constructs a metaphor that alerts us that optimal technological solutions are necessary. The sense of perplexity and wonder embedded in his designs has to do with the very human creative yearning for remaking one's life, for repairing wrong: the never-ending search for a meaning and a definition of the good life.

It is these principles that make Calatrava's structures so appealing and so uniquely engaging, that give them coherence and rigor at all scales, from their general configuration to their individual details. A series of five new bridges over the Trinity River and future lakes in Dallas, Texas (1998), and a group of three bridges over the Hoofdvaart in Haarlemmermeer, the Netherlands (1999–2004), demonstrate that it is these principles that account for the felicitous fit of the new structures into the landscape, the excitement they generate, despite the fact that they stand conspicuously in full view. Similarly, within historic urban settings, Calatrava's projects do not simulate forms of the past, nor do they hide or sink. Yet they do not offend, as one can see in his Lusitania Bridge (1988–91) in Spain standing next to a famous Roman bridge. In their cutting-edge technology and strangeness of appearance, these structures make their users or viewers reengage with the present while honoring the past. Finally, situated in socially challenging areas like Ground Zero, neighborhoods undergoing economic decline, or obsolescent industrial sites, Calatrava's works do not disrupt existing human ties, as most architectural interventions have since the 1960s. Without the rhetoric or demagogy of populism, they bring hope.

To be effective, the poetics of movement requires rigor and control; and to operate on the two levels mentioned above demands knowledge that participates in multiple domains. This cornucopia of knowledge was accumulated by Calatrava through continuous, intense "patient research," as Le Corbusier once said. He studied at an arts and crafts academy in Valencia, at the Ecole des Beaux Arts in Paris, at the Escuela Técnica Superior de Arquitectura in Valencia, and at the Swiss Federal Institute of Technology in Zurich, in addition to countless years of self-instruction on vernacular and international architecture. The subsequent method Calatrava has chosen for much of his research over the years has been envisioning possible schemes within existing precedents rather than counting and computation; and the technique to carry this out was sketching. The precedents Calatrava used to recruit by analogy and drawing were flying birds, bulls, and in particular, the human body, all having structural similarities with the new artifacts to be conceived. Calatrava produced an endless series of sketches of real-life objects offering a variety of configurations filling up an endless series of notebooks. All humans are endowed with these two contradictory, yet complementary intelligences: analysis and analogy. Few cultivate them to develop their complementary potential further. Calatrava did. In this respect, as mentioned in the beginning, Calatrava succeeded not only in delivering good architecture, but also in changing the way people think about architecture, bringing science and technology closer to art. Perhaps less known is that, reciprocally, he is also influencing engineering, bringing design—thinking through vision and envisioning—back to technology.

Perhaps where Calatrava exerted the most important influence and where his impact will be more decisive is with the generation of architects to come and their attitude toward technology. Clearly, Calatrava's spirit of experimentation combined with genuine enthusiasm, but also solid realism, has helped dispel a climate of indifference if not suspicion for things technical that was building up in a large number of academic institutions for the past three decades. ■

*Alexander Tzonis, a professor at the University of Delft, is the author of several books about Santiago Calatrava's work.*

PHOTOGRAPHY: © ALAN KARCHMER (OPPOSITE)

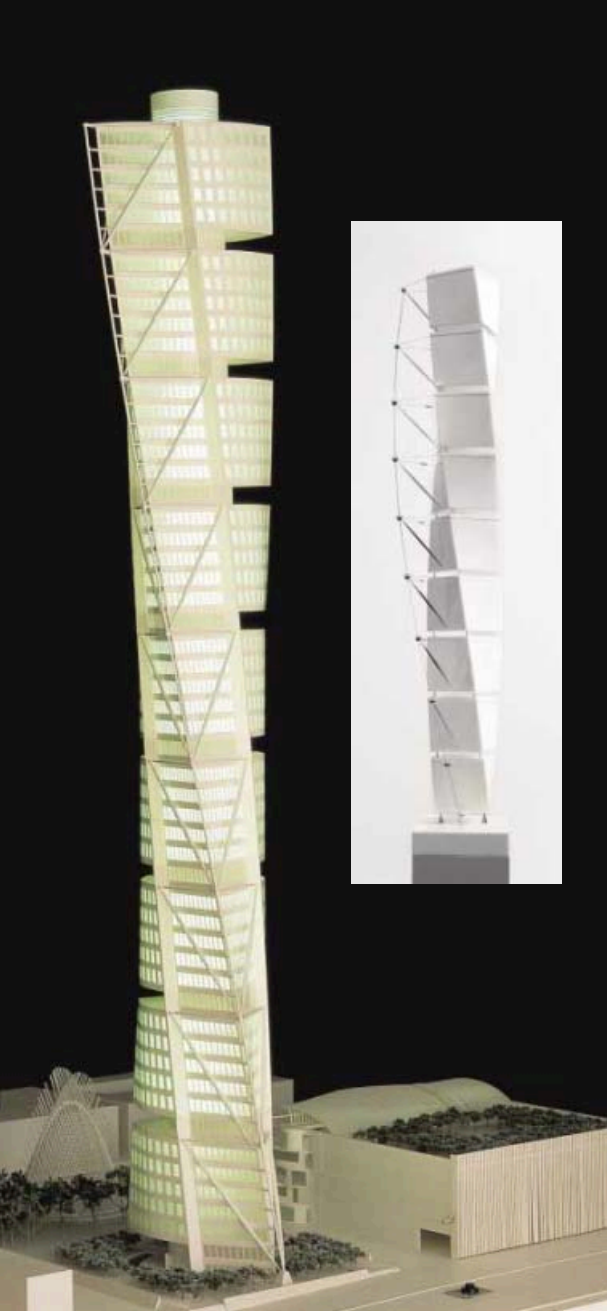


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**Cittern Bridge, Haarlemmermeer, the Netherlands, 2004.** [RECORD, November 2004, page 156]

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1

**1. Turning Torso, Malmo, Sweden, 2005 (estimated completion).**

**2. 80 South Street, New York, New York, 2006 or 2007 (estimated completion).**



2

## FUTURE PROJECTS

Over the years, much of Santiago Calatrava's work has been influenced by his experiments in sculpture, a field that has piqued his interest since childhood. Buildings like the Tenerife Opera (page 172, *5*) and bridges like the three over the Hoofdvaart in the Netherlands (page 165) echo his sculptures' tendency to embody movement, elasticity, and human and organic form. His newest works, though, experiment with concepts of weight and gravity, as if he had grown tired of the mundane constraints of the Earth. Technological advances and large budgets have helped further the ambitious character and scale of these projects.

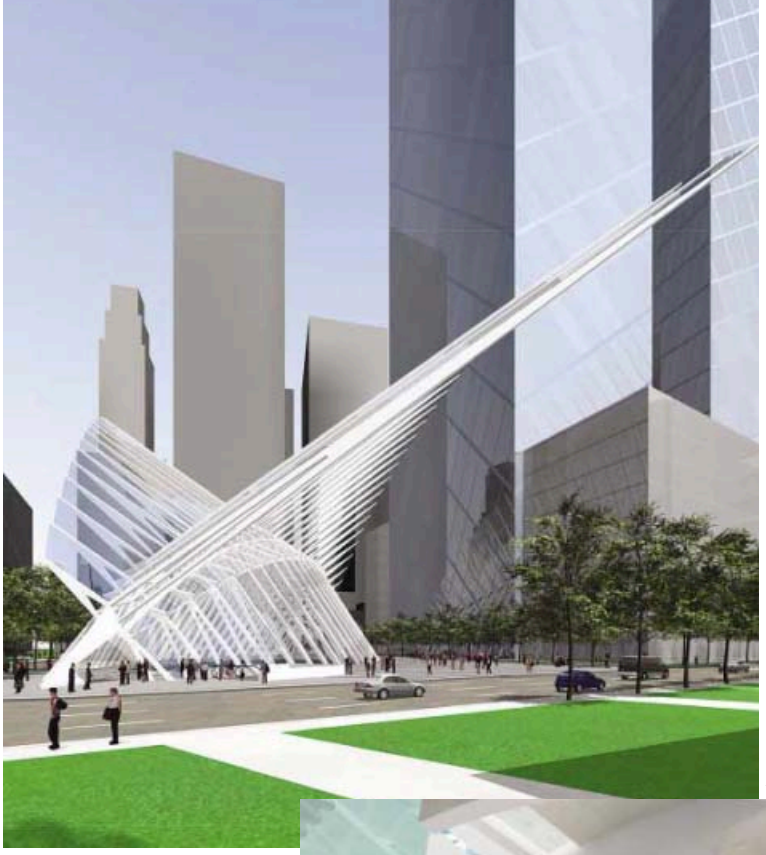
Calatrava's current 80 South Street project, an 835-foot high-rise apartment building in Lower Manhattan (*2*) made up of 12 glazed cubes radiating around a central core, is an almost exact replica of a sculptural work that the architect displays in his Manhattan town house. His *Turning Torso* high-rise in Malmo, Sweden (*1*), a twisting form also radiating around a central axis, is based on a torquing, white Thassos marble and chrome-plated steel sculpture of 1991 called *Twisting Torso*. Three new towers in Valencia, Spain (*5*), the final pieces of his immense City of Science, further elaborate on the ability to twist materiality and challenge gravity. Named *Valencia*, *Castellón*, and *Alicante*, each building's glass, steel, and concrete form will twist upward on a central axis, taking on new shapes, such as spindles and even a drops of water, as they progress skyward.

Meanwhile, ambitious new building scales carry Calatrava's free-form and kinetic sculpture to new realms. His Atlanta Symphony Center (*4*) will not only make room for 2,000 people, but its giant surrounding shells and fins will reach almost 200 feet in the air. One of the immense structure's primary goals will be to draw attention to itself, a goal expressed by the architect: "Architecture has this wonderful capacity to make a place unique. To become a symbol." Calatrava's kinetic World

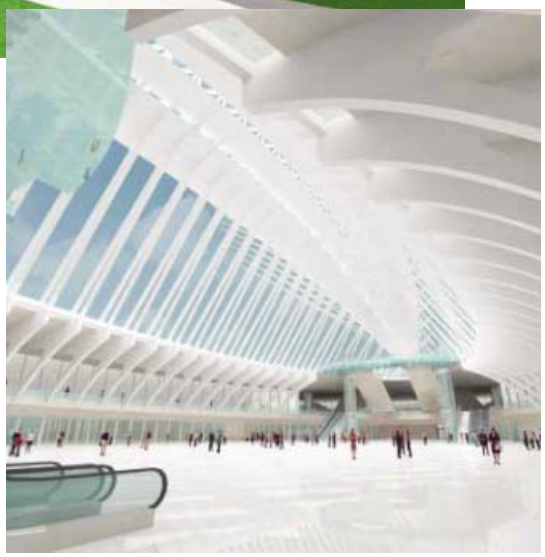
IMAGES: COURTESY SANTIAGO CALATRAVA S.A., EXCEPT AS NOTED; © DAVID SUNDBERG/ESTO/ SANTIAGO CALATRAVA S.A. (2)



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**3. World Trade Center Transit Hub, New York, New York, 2009 (estimated completion).**

**4. Atlanta Symphony Center, Atlanta, Georgia, 2008 (estimated completion).**

**5. Valencia Towers, Valencia, Spain, 2007 (estimated completion of first tower).**

IMAGES: COURTESY PORT AUTHORITY OF NEW YORK/ NEW JERSEY/SANTIAGO CALATRAVA S.A. (3)

Trade Center Transit Hub (*3*), which will sit on the eastern edge of the Trade Center site within its own plaza, will cost $2 billion, contain more than 200,000 square feet of interior space, and help transport over a quarter of a million commuters a day. At street level, an ovular, wing-shaped, 168-foot-high movable glass-and-steel structure will greet visitors. Underground, the station will feature roughly 200,000 square feet of retail, open space, and train platforms. When finished, Calatrava's City of Sciences in Valencia (page 170, *2*), clearly related to human forms, will be one of the largest built projects in the history of Spain.

These are just a few of the busy architect's future projects. New bridges under way include striking forms over the Trinity River in Dallas, Texas; the Macken Street Bridge in Dublin, Ireland; the Serreria Bridge in Valencia, Spain; the Quarto Ponte in Venice, Italy; and, in Israel, a footbridge in Petah Tikvah and a light-rail train bridge in Jerusalem. More new buildings include a train station in Bologna, Italy; a photography museum in Doha, Qatar; a train station in Liège, France; and university buildings and a sports hall in Maastricht, the Netherlands.

"We all spend time trying to build a new vocabulary," says Calatrava, who notes a progression toward more simple sculptural forms over his career. "This research moves you into some of the most daring adventures of your life." He adds, "We work with material the same way an artist does, inventing along the way. I continue to add new dimensions to my work, because technically we are always able to do something new, and because it is always important to be responsive to our society."

So what's next? That, says Calatrava, is unclear, but he seems sure that it will not be a repeat of what we see now. "The most relevant fact is not where I am today, but the fact that my work is ongoing. You don't look backward; you see the next problem you want to solve." *S.L.*



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**1. BCE Place, Toronto, Canada, 1992. [RECORD, February 1993, page 84]**

**2. Montjuic Telecommunications Tower, Barcelona, Spain, 1992. [RECORD, August 1992, page 102]**



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PHOTOGRAPHY: COURTESY SANTIAGO CALATRAVA S.A., EXCEPT AS NOTED



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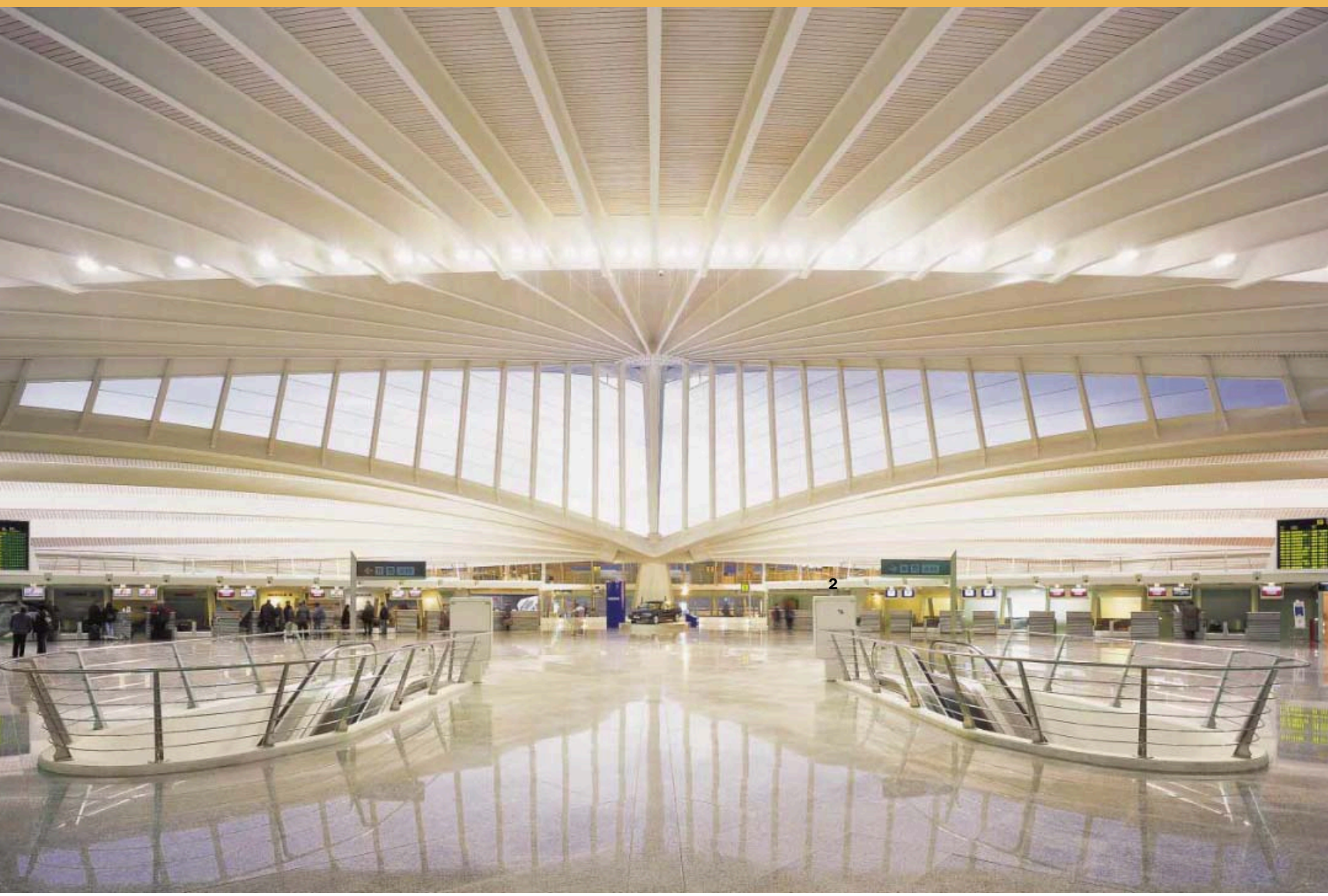
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**3. Lyon Airport Station, Satolas, France, 1994. [RECORD, July 2000, page 85]**

**4. Oriente Train Station, Lisbon, Portugal, 1998.**

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1. Sondica Airport, Bilbao, Spain, 2000. [RECORD, July 2000, page 83]

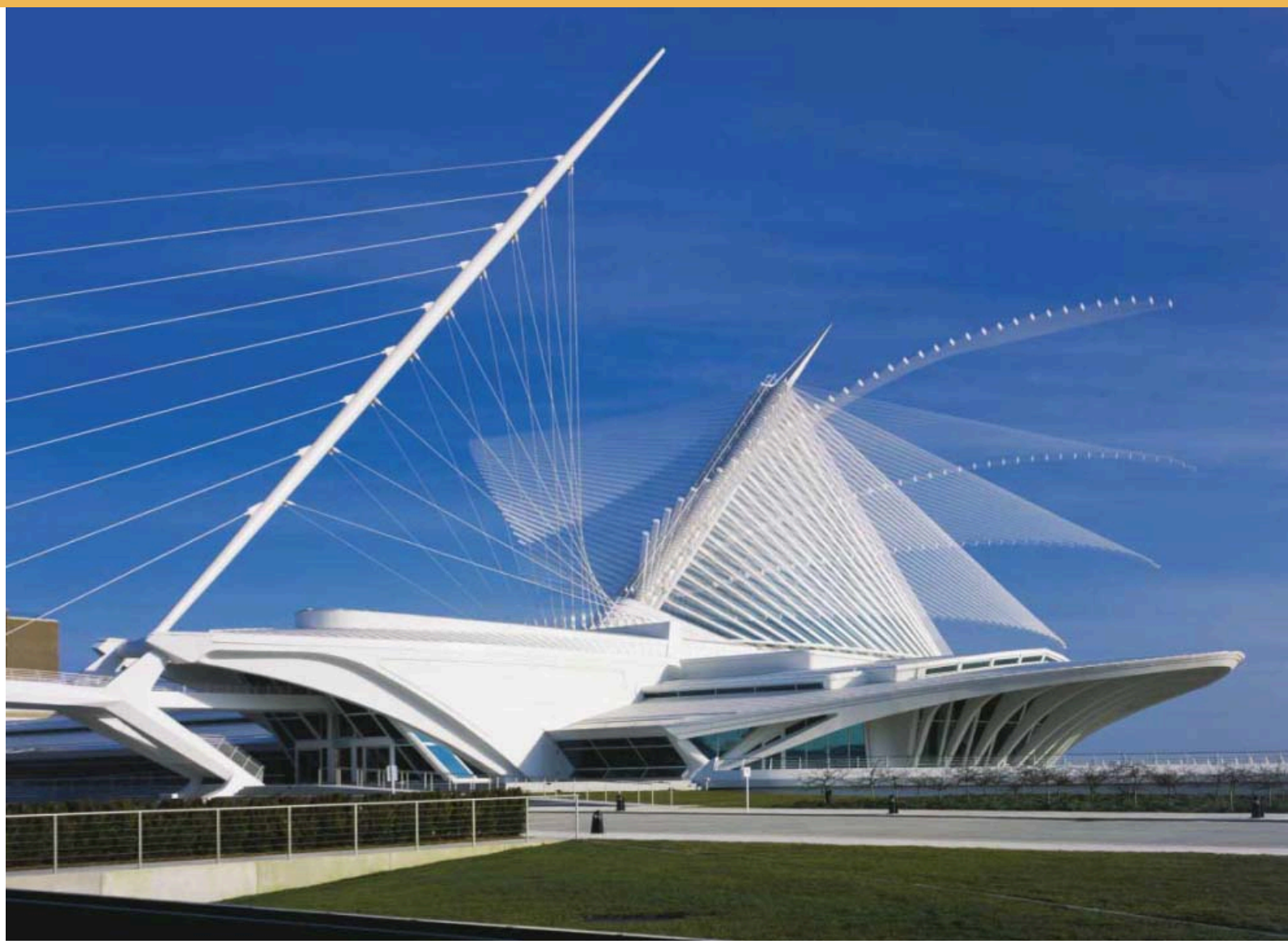
2. City of Arts and Sciences (science museum, planetarium, promenade, and parking structure), Valencia, Spain, 2000. [RECORD, July 2000, page 74]

2





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PHOTOGRAPHY: © ALAN KARCHMER (3)

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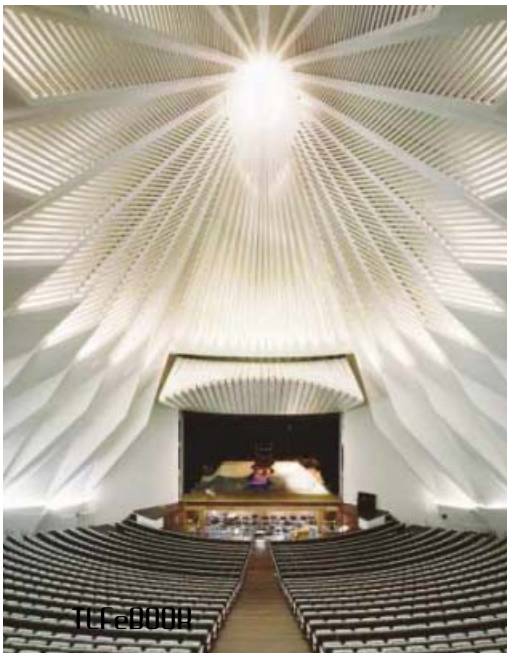
**3. Milwaukee Art Museum expansion, Milwaukee, Wisconsin, 2001.** [RECORD, March 2002, page 92]

TLFeBOOK



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**4. Bodegas Ysios Winery, Laguardia, Spain, 2001. [RECORD, May 2003, page 242]**

**5. Tenerife Opera House, Santa Cruz, Tenerife, Canary Islands, Spain, 2003. [RECORD, February 2003, page 78]**

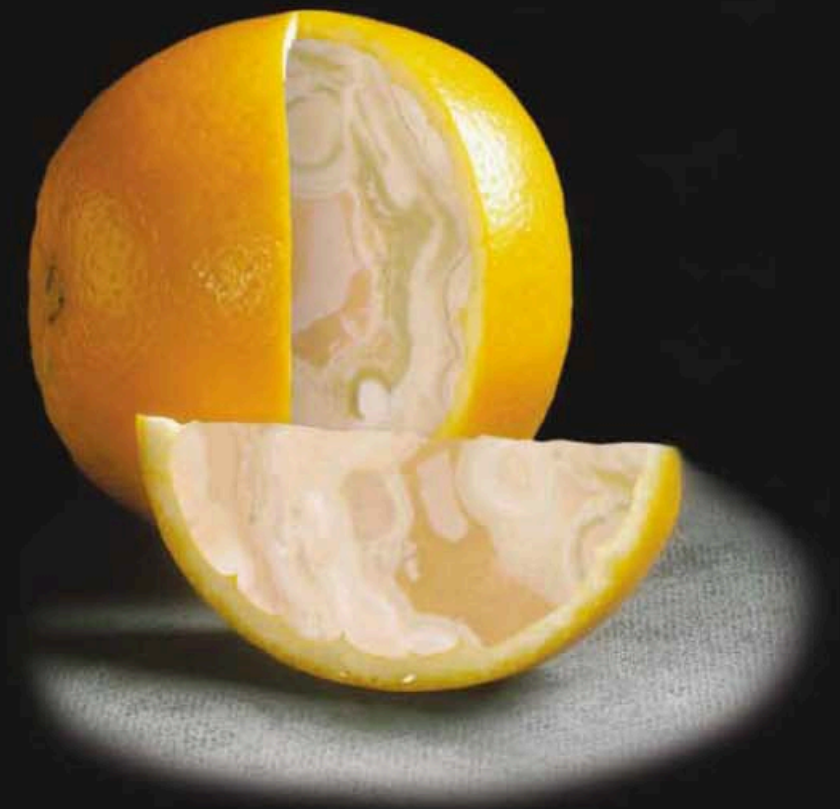
PHOTOGRAPHY: © ALAN KARCHMER (5); WWW.PALLADIUM.DE BARBARA BURG/OLIVER SCHUH (6)



**6. Athens Olympic Sports Complex, Athens, Greece, 2004.**



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*Scheherazade Travertine, New Mexico*

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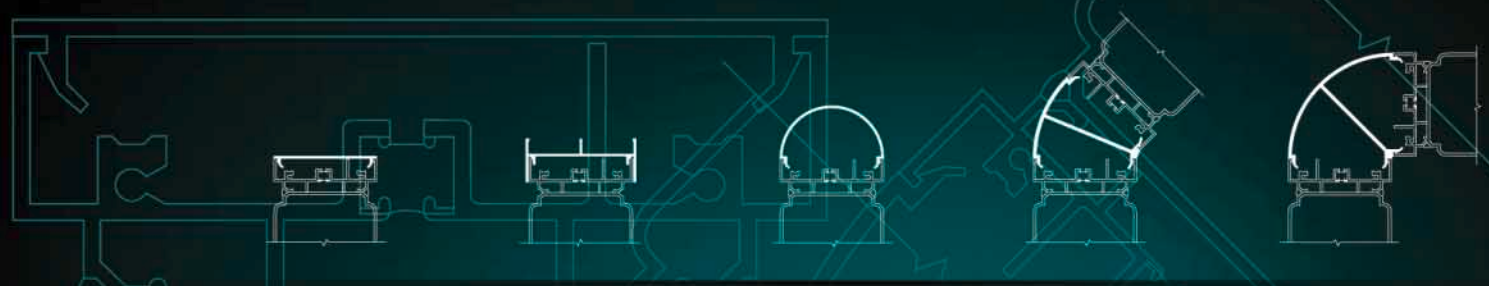
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90-degree corner caps were used to connect four acrylic block panels together to form decorative, lit towers. The panels were mounted to the base and top piece with flat caps.

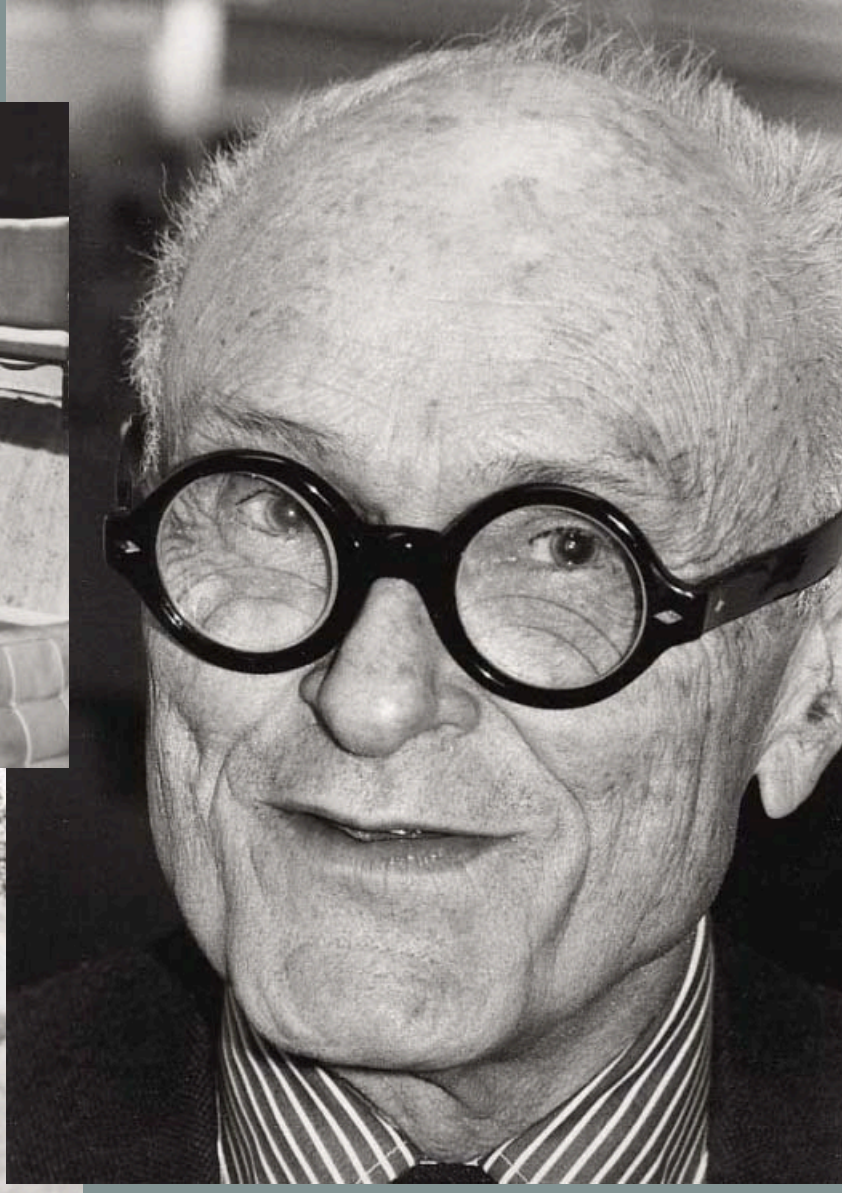


Aluminum mulls were used to connect these flat panels and radius walls together. A flat cap and mounting channel were used to mount the units to the base and the walls. Flat caps were also used to connect the desktop to the top of the panels.

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**Clockwise from top left, this page and opposite: Philip Johnson and Mies van der Rohe at MoMA's retrospective of Mies's work, 1947; Johnson in 1985; the Glass House, New Canaan, Connecticut, 1949; Johnson showing the model for the New York State Theater in 1961; Johnson (center) with Alfred Barr, Jr., and Margaret Scolari Barr in Cortona, Italy, in 1932.**



PHOTOGRAPHY: © MOMA ARCHIVES (TOP LEFT); DOROTHY ALEXANDER (TOP RIGHT); BETTMAN/CORBIS (BOTTOM RIGHT); MOMA ARCHIVES (BOTTOM LEFT); EZRA STOLLER/ESTO (OPPOSITE)



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# Philip Johnson:
## An American Icon



Can any public figure expect a totally positive obituary today? Philip Johnson, FAIA, who died on January 25, 2005, at 98, probably would have said, "Of course not." He no doubt knew a "de-pedestalization" process had to occur as the media's payback for the fame and glory it bestowed on him during his career. To be more broad-minded, RECORD has asked three longtime observers of Johnson—one, an admirer; another, a detractor; and the third, his biographer—to address key aspects of his life, including its controversies. *Suzanne Stephens*





TLFeBOOK

**By Franz Schulze**

While working on his biography, I was able to form a considered opinion of Philip Johnson as a person and a professional, and was inclined to believe the majority of his obituaries would be fairly positive. He spent seven decades at the center of the architectural universe—as designer, critic, historian, museum curator, and promoter of younger architects.

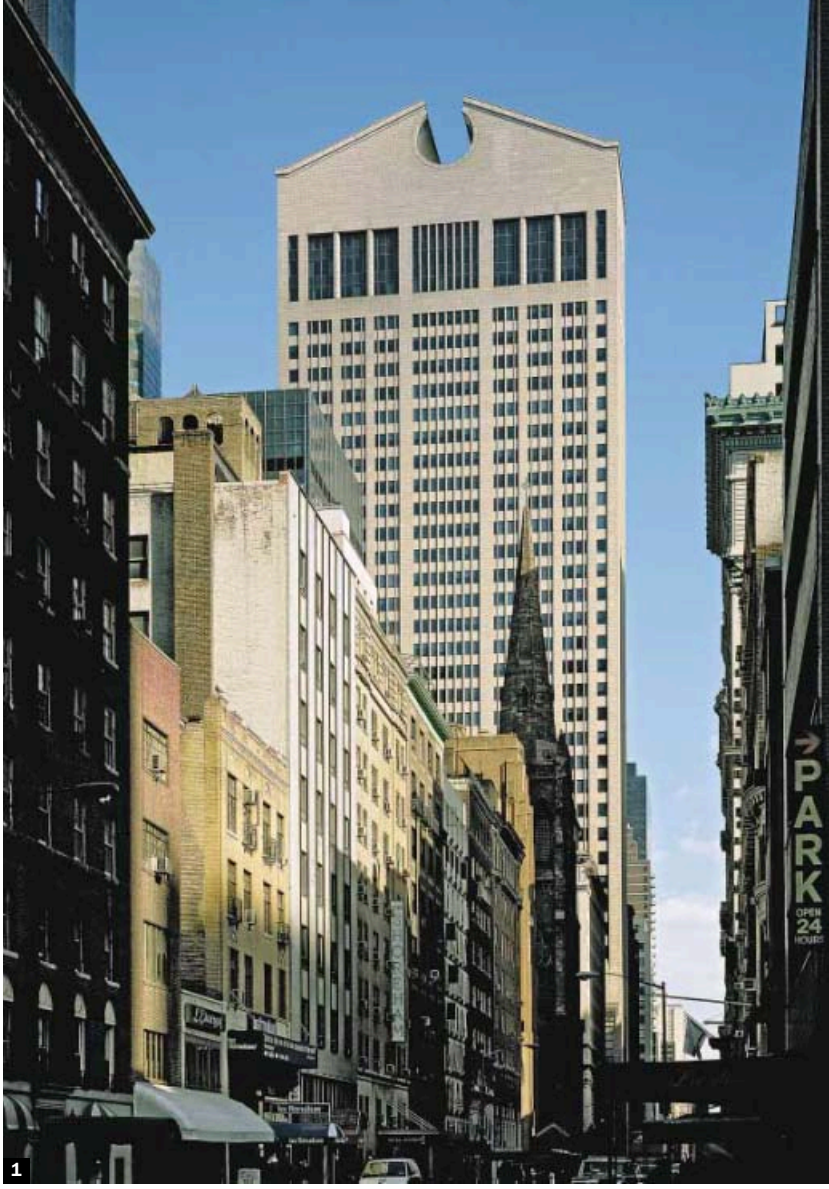
Johnson was also a wizard at working the media. In view of that, I am surprised by much of what I have read since his passing in January. More than a few well-informed contrary views have surfaced, notably in articles by Mark Stevens in *The New York Times* (January 31, 2005), Roger Kimball in *The New Criterion*'s Weblog *Armavirumque* (January 31, 2005), and by Andrew Saint in *The Guardian* (January 29, 2005). Each drew attention in some detail to Johnson's commitment to the Nazi cause, which was rooted in his privileged family life, his dismissal of the "lower orders" based largely on his worship of Friedrich Nietzsche, and a consequent love of power he saw manifest in the charismatic figure of Adolf Hitler.

In 1934, Johnson gave up a promising position as chair of the architecture department at the Museum of Modern Art and spent most of the next six years in pursuit of political goals that varied from following the bandwagon of the demagogic Louisiana politician Huey Long to running for office in his native Ohio on a populist, anticapitalist agenda to writing attacks on Franklin Delano Roosevelt for *Social Justice,* a periodical sponsored by the anti-Semitic "radio priest" Francis Coughlin, and eagerly following Hitler's Wehrmacht when it invaded Poland at the beginning of World War II. Though he shifted from one political objective to another during this period, he remained true to his belief in power, especially if manifest in someone—like Hitler or Long (or Mies van der Rohe, for that matter)—who seemed to Johnson a prophetic figure in the Nietzschean mold. He did not overtly surrender his political orientation until he was identified as a "fascist" in a best-selling book *Berlin Diary: The Journal of A Foreign Correspondent, 1934–1941*, by William L. Shirer, published in 1941. By then, Johnson had withdrawn from politics to enroll as an architecture student at Harvard in the fall of 1940. Even then, the exercise of power, now returned to the aesthetic realm, remained a central motivation.

Many of the obituaries, commenting on the body of his architectural work, have leveled tougher and more unsparing criticism than I anticipated. There has been little praise for the big corporate buildings, like the AT&T Building, now Sony Plaza (*1*), that brought him such a flood of publicity. The two works that have been remembered most affirmatively are small in size: the exquisite Museum for Pre-Columbian Art at Dumbarton Oaks in Washington, D.C. (*2*), and his own purist Glass House in New Canaan, Connecticut (page 177). And even the latter would not have been designed as it is without the model of Mies's Farnsworth House (1951). The obituaries have left the impression that many critics regard him primarily as a pasticheur.

Probably that is what Johnson was—a "flibbertigibbet," as he called himself. His mercurial intelligence com- *(continued on page 374)*

*Franz Schulze, the author of* Philip Johnson: Life and Work *(1994), is Betty Jane Schultz Hollender Professor of Art, Emeritus at Lake Forest College.*



1


2



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**1. ATT Building (now Sony Plaza), New York, New York, 1984.**
**Philip Johnson and John Burgee and Simmons Architects**

**2. Museum for Pre-Columbian Art, Dumbarton Oaks, Washington, D.C., 1963.**
**Philip Johnson Associates**

**3. Chapel of St. Basil, University of St. Thomas, Houston, Texas, 1997.**
**Philip Johnson, Ritchie & Fiore Architects with John Manly and Merriman Holt Architects**

**4. University of St. Thomas master plan: Strake, Jones and Welder Halls, Houston, Texas, 1957–59.**
**Philip Johnson Associates with Bolton & Barnstone**


3

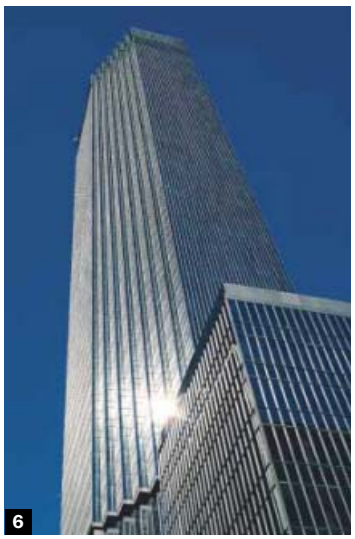

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**5. Crystal Cathedral, Garden Grove, California, 1980.**
**Johnson/Burgee Architects with Albert C. Martin Associates**

**6. IDS Center, Minneapolis, Minnesota, 1973.**
**Philip Johnson and John Burgee with Edward F. Baker Associates**

**7. Four Seasons Restaurant at the Seagram Building, New York, New York, 1959.**
**Philip Johnson with William Pahlmann Associates**


6


7

PHOTOGRAPHY: © PETER MAUSS/ESTO (1); EZRA STOLLER/ESTO (2); RICHARD PAYNE, FAIA (3, 4, 5); FARRELL GREHAN/ESTO (6); EZRA STOLLER/ESTO (7)

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**By Robert A.M. Stern**

In the wake of his recent death, Philip Johnson has been lauded for his curatorial acumen, his social grace, and his collegiality, especially to the young. But he has not been praised for another attribute—that of being a very talented architect. Johnson deserves to be remembered for his architecture, which should be foremost in any assessment of his life.

Johnson was one of the commanding talents of the postwar generation of American architects. He built beautifully. Very many of his buildings challenged accepted formal tropes. Was he the greatest architect of the 20th century? I'll leave that assessment to others. What I will say is that not one building by Johnson has failed to give me pride in being an architect, in knowing what an architect can accomplish. I have learned something from every one of his buildings—and they have given me a great deal of pleasure.

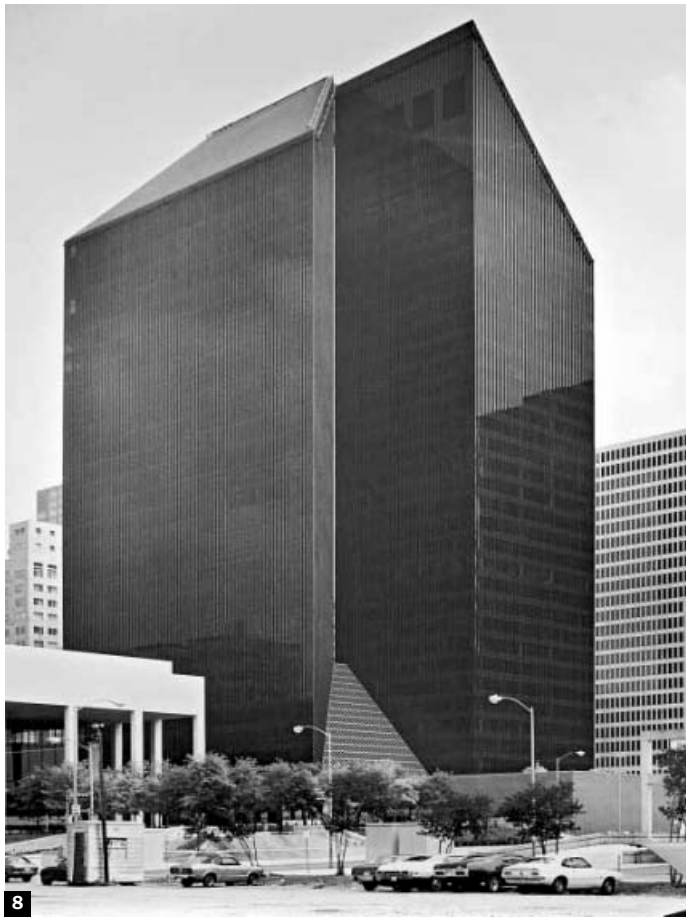
Johnson was a master of planning. Indeed, I would say he was one of the few genuine functionalists among a generation that professed utility but seldom achieved it. He was also a master of siting and landscape, one of the very few in our time. Take the Glass House (page 177) and its outbuildings as a case in point. Over many years, I was lucky enough to frequently visit that consummate 20th-century estate park, as new buildings were added and the landscape evolved. Each building opened up a new architectural direction; even more remarkable was the placement of the buildings and the paths of "procession," to use Johnson's term, which connected them.

The Glass House as well as the Sculpture Garden at the Museum of Modern Art in New York (*10*) are acknowledged masterworks. But I would like to praise some other Johnson designs that embrace the landscape. For example, the Fort Worth Water Garden (*12*), where, in the center of a busy city, extraordinary geometries are cut into the earth to evoke the sounds and shapes of nature's aqueous crevasses without indulging in obvious representationalism. Another superb Johnson building-in-landscape, though of a completely different scale and character, is the Museum for Pre-Columbian Art at Dumbarton Oaks in Washington, D.C. (page 178, *2*). Nestled into greenery, its exquisitely detailed, bijoulike, shallow-domed galleries carried on round columns framing curved glass panels bring the spatial magic of late Roman architecture to life in a wholly modern way.

Philip Johnson and John Burgee's IDS Center, Minneapolis (page 179, *6*), propelled Johnson into the forefront of commercial architecture. Yet he also confronted the important issues of center-city urbanism, for he made a positive feature of Minneapolis's existing, vitality-draining, two-level pedestrian circulation system. Reimagining the central glass-covered light courts of 19th-century office buildings and hotels, he created one of the few convincing, lively, wholly enclosed urban public places of the postwar era.

After IDS, Johnson, working with Burgee, designed some of America's best skyscrapers. With the two Pennzoil towers in Houston (1976), he came closest of any architect to adapting the Minimalist sculpture of the 1960s and 1970s—such as the work *(continued on page 375)*

*Robert A.M. Stern, FAIA, is principal of Robert A.M. Stern Architects and dean of the School of Architecture at Yale University.*



8



9



TLFeBOOK

**8. Pennzoil Place,**
**Houston, Texas,**
**1976.**
**Johnson/Burgee Architects**
**with S.I. Morris Associates**

**9. 53rd at Third ("Lipstick")**
**Building,**
**New York, New York,**
**1986.**
**John Burgee Architects with**
**Philip Johnson**

**10. Abby Aldrich Rockefeller**
**Sculpture Garden,**
**Museum of Modern Art,**
**New York, New York,**
**1953.**
**Philip Johnson Associates**
**with Landis Gores and George**
**Hopkinson; James Fanning,**
**landscape architect**

**11. John F. Kennedy Memorial,**
**Dallas, Texas,**
**1970.**
**Philip Johnson**

**12. Fort Worth Water Garden,**
**Fort Worth, Texas,**
**1974.**
**Johnson/Burgee Architects**



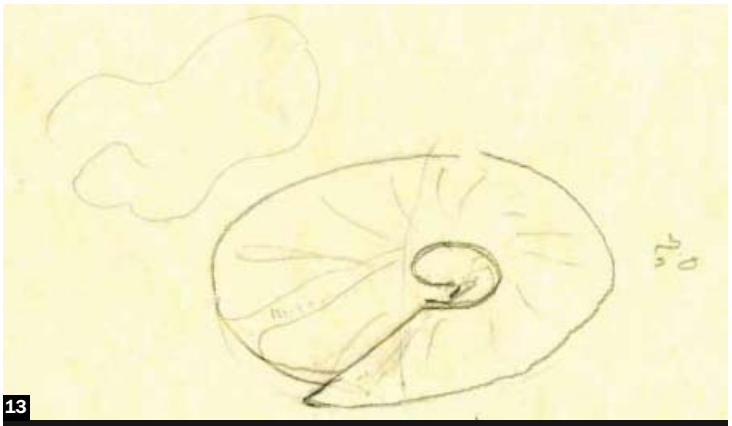
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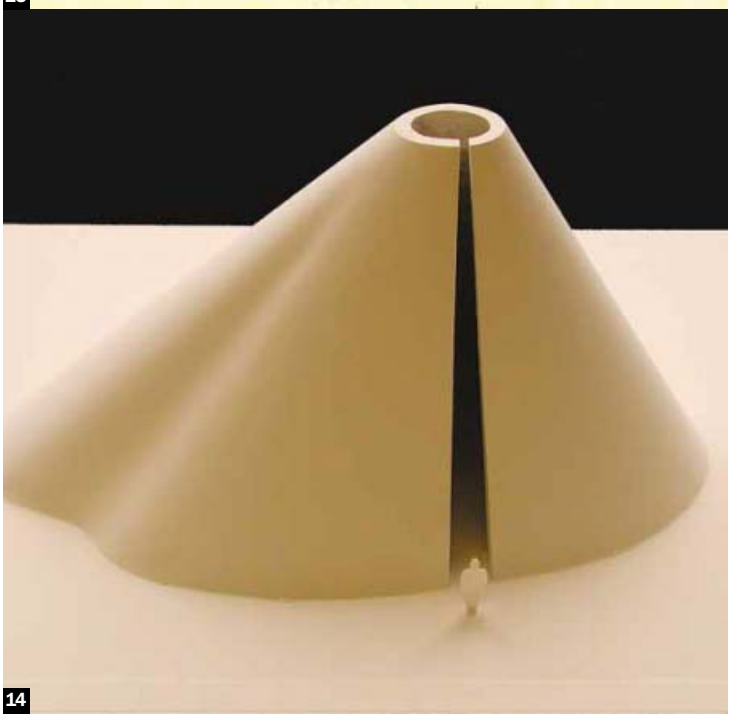

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PHOTOGRAPHY: © FARRELL GREHAN/ESTO (8); PETER MAUSS/ESTO (9); EZRA STOLLER/ESTO (10);
RICHARD PAYNE, FAIA (11, 12)

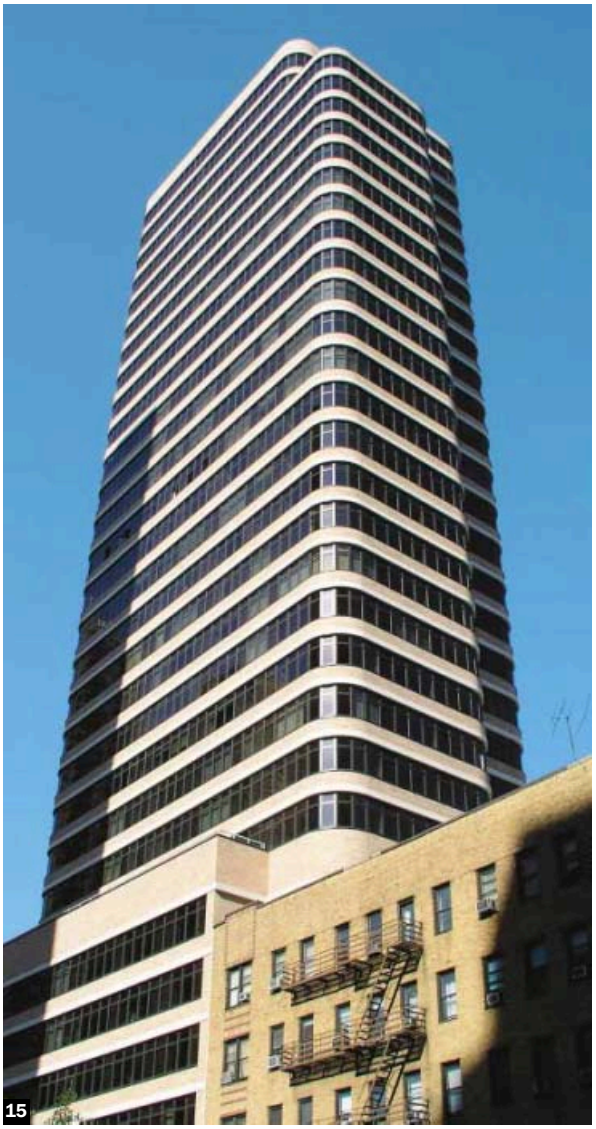
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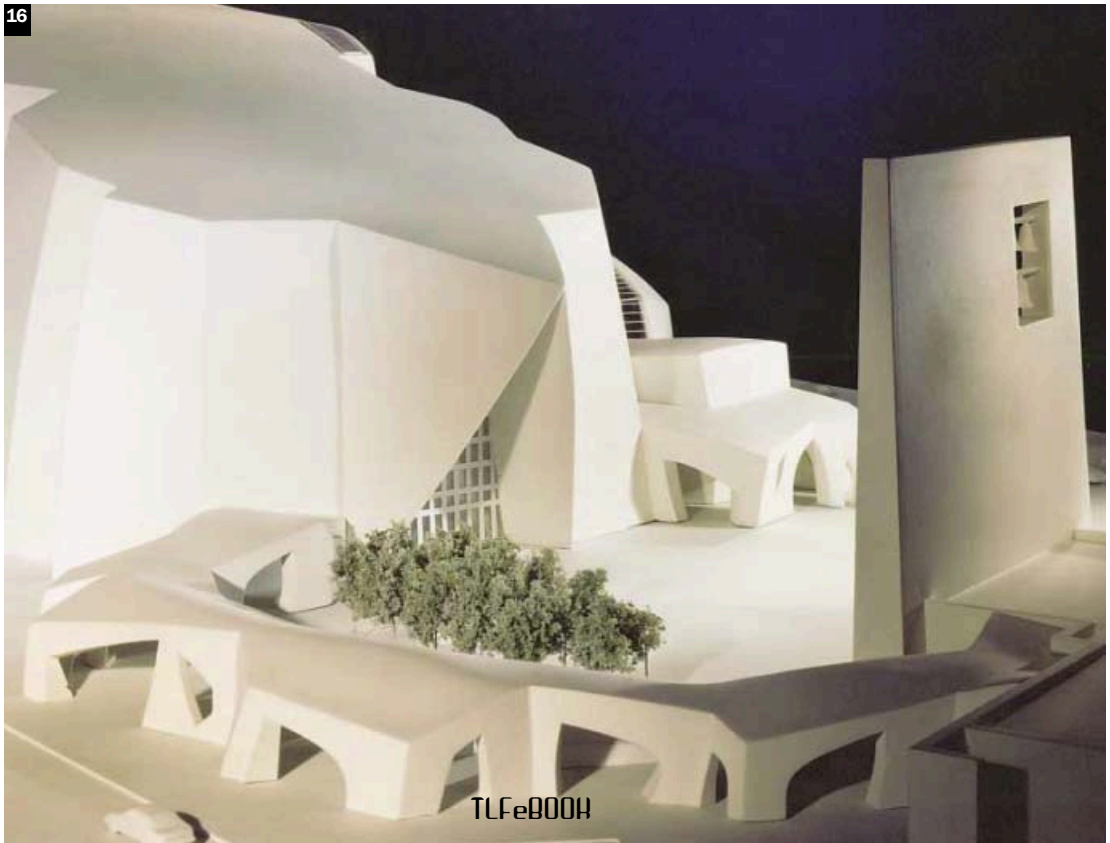
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TLFeBOOK

**By Michael Sorkin**

The past year has seen the demise of two major figures of American culture, filmmaker Russ Meyer and architect Philip Johnson. Although Meyer was the purer talent, both made enduring, seminal contributions to the ironic, vaguely pornographic, and deeply kitsch sensibility that has become one of the major markers of our contemporary creativity.

Meyer—the celebrated soft-core "King Leer"—began his career as a combat photographer during the Second World War, went on to make industrial films and take photographs for *Playboy*, leading to his cinematic breakthrough in 1959 with *The Immoral Mr. Teas*, a film which *Time* magazine suggested had "opened the flood gates of permissiveness as we know it in these United States." The film was Meyer's Glass House, for it put him on the map by exposing almost everything. His oeuvre went on to include such legendary works as *The Supervixens*, *Beyond the Valley of the Dolls*, *Beneath the Valley of the Ultravixens*, and *Faster Pussycat*, *Kill, Kill*, the latter described by John Waters as "beyond doubt the best movie ever made." Meyer himself responded to the film's cult status by insisting that "too much emphasis is put on it being significant."

The critic Roger Ebert—author of the screenplay for *Beyond the Valley of the Dolls*—described Meyer as having "a sensibility somewhere between Andy Warhol and Al Capp," a succinct appreciation. Meyer's legendary attachment to big breasts (often described by him in such architectural terms as "cantilevered," "superstructure," etc.) is strongly analogous to Johnson's feeling for architecture, which might, in its sensibility, be described as somewhere between Andy Warhol and Walt Disney. Both Meyer and Johnson were professionally inspired by a deeply felt connoisseurship of the chosen objects of their affection, and both devoted their lives to inventing forms of representation that were worshipful rather than inventive. Both also displayed a critical relationship to their own work that consistently refused to treat it seriously according to the canonical theories of the day. And both were clearly enabled by the sense of liberation that grew out of the styles of consumption that blossomed in the 1950s.

The central mass-cult figure of the period was certainly Disney, whose project suffuses the work of both Meyer and Johnson. For Johnson, the kitschily creative geography of Disneyland, with its recombinant approach to form and style, was the substrate of his own practice. By liberating the juxtaposition of nominally discrepant, phony mimetic architecture in space—Main Street, U.S.A., terminated by Ludwig's Castle—Disney anticipated the temporal trajectory of Johnson's career, which in due course managed to superficially ape virtually every known architectural style and, in turn, freed a legion of hacks to do the same.

Because Johnson and Meyer so succinctly embody the sense of excess that is central to kitsch, both are likely to be remembered less as auteurs then as exemplars. Both represent the entertaining but vapid core of American mass culture, the complete disengagement of form from constructive systems of meaning, amusing inducements to stop thinking. Although Meyer was well grounded technically *(continued on page 377)*

*Michael Sorkin, a* RECORD *contributing editor, is director of the Graduate Urban Design Program at the City College of New York.*



**13. Al-Thani Sculpture (conceptual sketch) for Sheikh Saud Bin Mohammad Ali Al-Thani Doha, The State of Qatar, 2005 (completion). Philip Johnson/Alan Ritchie Architects**

**14. Al-Thani Sculpture (model) for Sheikh Saud Bin Mohammad Ali Al-Thani Doha, The State of Qatar, 2005 (completion). Philip Johnson/Alan Ritchie Architects**

**15. The Metropolitan (apartment building), New York, New York, 2005. Philip Johnson/Alan Ritchie Architects**

**16. Cathedral of Hope, Dallas, Texas, 2008 (completion). Philip Johnson/Alan Ritchie Architects**

**17. TransGas Energy Systems, Cogeneration Plant, Brooklyn, New York, 2009 (completion). Philip Johnson/Alan Ritchie Architects**

PHOTOGRAPHY: © B. PIETRO FILARDO (14); COURTESY PHILIP JOHNSON/ALAN RITCHIE (15, 16); RENDERING: LUFENG WANG (17)



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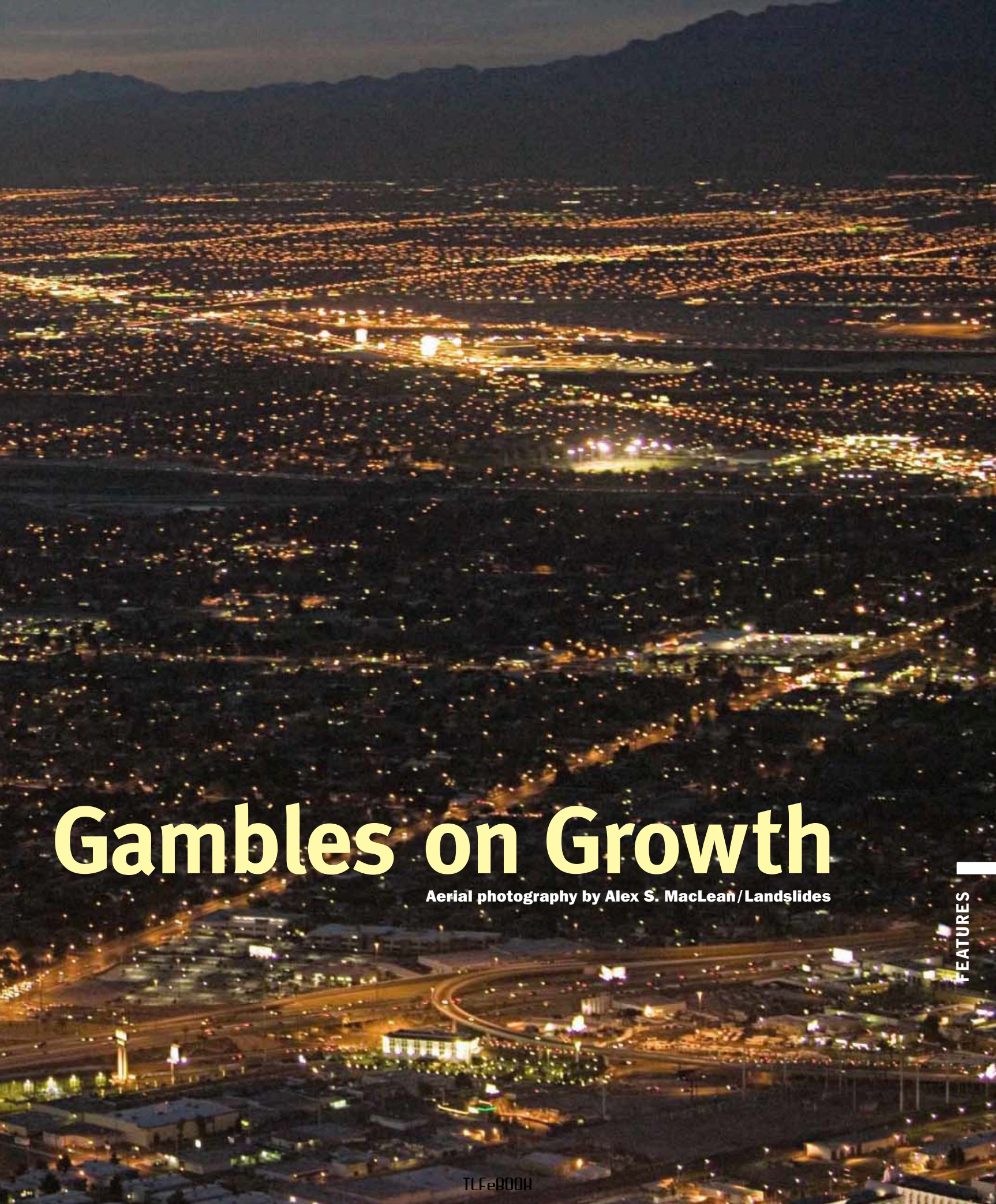


Though the gaming economy still powers Las Vegas (below), growth itself is nearly as important.

# Las Vegas



TEFeBOOK



# Gambles on Growth

**Aerial photography by Alex S. MacLean/Landslides**



TLFeBOOK

By James S. Russell, AIA

It still galls a lot of people that a Strip festooned with a desperate neon exuberance, that preys on get-rich-quick dreams and advertises has-been headliners, could become an economically vital metropolis of 1.8 million people. Every year tens of thousands of recent immigrants realize the quintessential American desire to make it in Las Vegas.

Las Vegas happily confounds its naysayers. It has created a vibrant metropolitan economy on gambling, an activity that remains a vice in the eyes of many Americans (one that tends to attract other vices). Pundits periodically predict the demise of this, um, house-of-cards economy. But smart money has been ignoring the warning signs for decades. Las Vegas found an economic-success formula that eludes so many other places: high growth combined with low costs. It's been affordable to all but the lowest-paid service workers—and many of them are far better paid than they are elsewhere because Las Vegas is one of the most unionized cities in the country. Low taxes and hands-off regulators make it easy to start a business here, and easy for those businesses to expand.

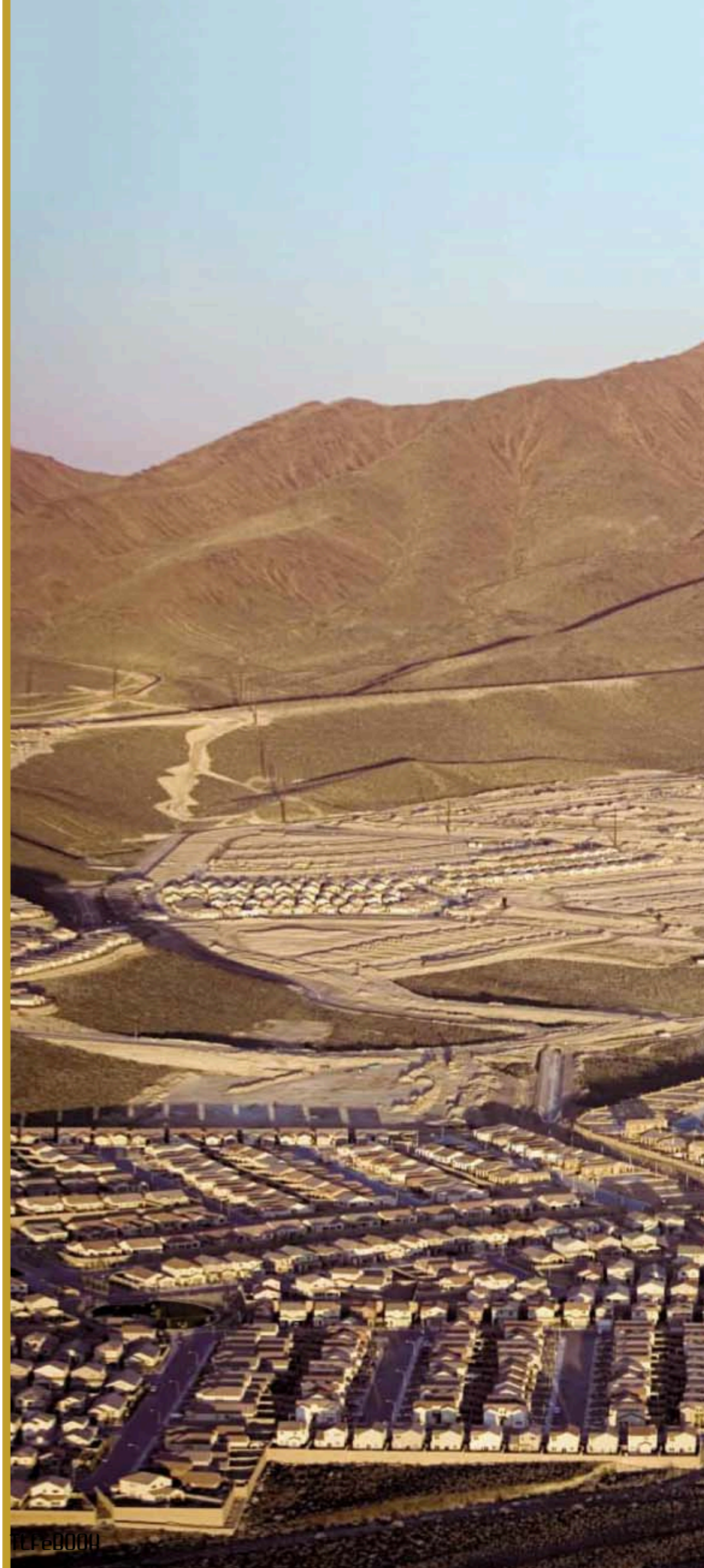
Rapid population growth (around 100,000 per year) adds new customers and new opportunities every day. Designer Richard McCann and two partners came up with the idea for Loft 5, a stylishly contemporary residential project on the fast-developing south Strip. "It's been a dream project," he said by cell phone. "We conceived the project, tied-up the land, and got a partner in two weeks." The project broke ground last month with 65 percent of the units presold. A local architect has prepared working drawings of McCann's design because he has been out of architecture school only a year and a half. "No one's ever gone broke overestimating the rate of growth in Las Vegas," comments Hal Rothman, a local historian, author of *Neon Metropolis* (Routledge, 2003), radio host, and professor at the University of Nevada Las Vegas.

"NO ONE'S EVER GONE BROKE OVERESTIMATING THE RATE OF GROWTH IN LAS VEGAS."

### Affordable no more

Skyrocketing house prices could kill the goose that lays the glitter-encrusted golden eggs, if only because affordability has for so long been a draw. The burgeoning casino industry needs armies of service workers, people often lacking the skills to find good-paying jobs elsewhere, who have been attracted to Las Vegas by its low costs. The just-opened $2.6 billion Wynn Las Vegas casino complex added as many as 10,000 jobs all by itself. The median house price, though, has risen from $140,000 in 1997 to $287,000 at the end of 2004. "Until 2001, two entry-level service workers making 9 to 10 dollars an hour could buy a modest house here," said Steve van Gorp, redevelopment manager for the City of Las Vegas.

Las Vegas is feeling the home-price-appreciation wave evident nationwide, but the recent price spikes have to do with unique conditions. In years past, the metro area has been able to accommodate rapid growth by developing massive empty tracts





Las Vegas builders have accommodated growth by making deals for huge tracts of federal land. Fewer such tracts are available as the city bumps up against sensitive land at its edges.

held by the Federal Bureau of Land Management (BLM). Howard Hughes famously obtained 22,500 BLM acres, where his corporation later developed the sprawling planned community of Summerlin at the western edge of the city, jump-starting the current wave of megagrowth.

Summerlin's first home sale was in 1991. Now only 6,000 of its acres remain as it heads rapidly to its ultimate population of 80,000. Dozens of other planned communities, their size each measured in square miles, have sprouted over the past two decades. But development on such a scale is now history because growth has consumed much of the land BLM is able to dispose of, explained Rod Allison, a planning manager in Clark County's Comprehensive Planning unit. (The county encompasses all of metropolitan Las Vegas.) Raw land prices are about 10 times higher than they were four years ago. "Even if there's not an actual scarcity, there's a scarcity dynamic," says Robert Lang, of the Metropolitan Institute at Virginia Tech, who studied the area as part of research he's done on fast-growing "boomburgs." As you get near capacity, he adds, "you build out rich, not poor."

There's little handwringing about this transformed development economy. It's seen as just another opportunity for those visionary enough to figure out how to profit by it. As it has tended to do, Las Vegas casually tosses out the old development model and just as casually embraces a new one. "Builders have tried to keep housing affordable by shrinking lot sizes," says Rothman. Even single-family housing has tightened up to as many as 14 units per acre, comparable to the densities of brownstone blocks in cities like New York or Boston.

## BUILDERS HAVE PLANNED 300- AND 400-FOOT-TALL TOWERS ALL OVER THE VALLEY.

What's built today conspicuously lacks the charm of the Back Bay or Brooklyn Heights, however. At the urban edge, beyond the partly finished beltway, the boxy beige stucco houses have simply been shoved ever closer together. "You can't even drive a car between them," marvels Lang. Punched vinyl windows gaze across the few feet of graveled areaway to other punched vinyl windows. Vistas to the stunning mountains or the glittering Strip are mystifyingly ignored. It's a vision of suburbia so degraded that the advantages of the single-family home have all but disappeared.

Summerlin leads the way in planned design locally, and Charles Kubat, who was a vice president for planning and design at the Howard Hughes Corporation (and is now vice president of planning and design at Carina Corporation, a builder), showed me a neighborhood where density is handled more gracefully. Lot lines of houses zigzagged to accommodate off-street garages and pleasing shared entry courtyards. Graceful as these gestures are, they are rare. The design challenge of density in Las Vegas has yet to find uniquely local expression. If density can't be more often combined with genuine amenity, it's not hard to imagine a backlash developing against it. Instead, most builders sell packages of upgraded appliances or the dubious prestige and security of gated "communities." (The ubiquity of gates notwithstanding, burglaries and rape, like most categories of crime, run much higher than national averages here.)

### High-rise craze

Closer to the Strip, Las Vegas has decided there's nowhere to go but up—way up. Rapidly inflating land costs have caused developers to skip over conventional higher-density solutions, like garden apartments. "We have 28 high-rise condo projects already approved," says Van Gorp, "with 25 more in the pipeline." Most of the Strip condos have been snapped up by second and third home buyers, Strip celebrities, and speculators. But 400-foot buildings have been proposed all over the valley, combining apartments with a hotel or with shopping. This portends a dramatic change in the city's form. "Only six years ago, we couldn't get anyone interested in building mixed-use projects," said the county's Allison. "Now all that has changed."

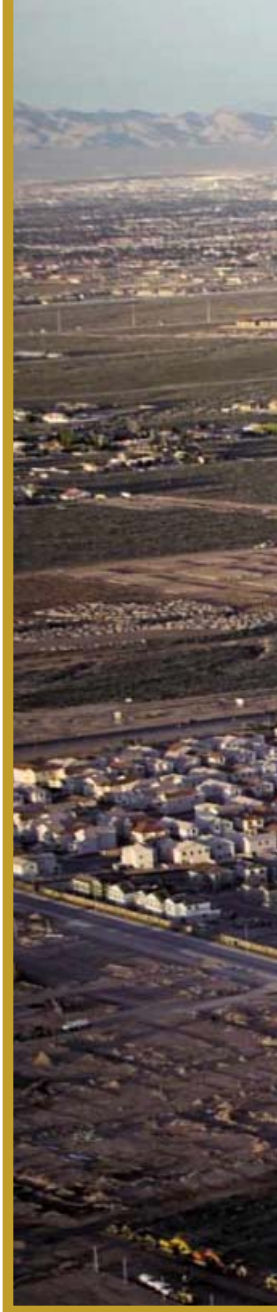
Although I kept hearing about an emerging Las Vegas style, developers of these large-scale projects have so far imported types developed elsewhere. SoHo Lofts (JMA Architecture) appropriates a name evoking industrial space, wraps it in South Beach Miami Moderne, and stacks it atop a blank-walled parking garage. Donald Trump will tuck a pair of gold-reflective-glass condo towers between two casinos. Van Gorp's conference room is piled with presentations from developers from as far away as New York and Australia.

The prospect of new towers blocking vistas to the celebrated Red Rocks, just west of the city, sent normally laissez-faire planners scurrying. Now the county has defined several zones where mixed-use high-rises would be permitted. "Our commissioners wanted some predictability about high-rise, high-density projects for infrastructure and service providers," explained Allison. The areas for large-scale development are nevertheless very generous, about doubling the current length of the Strip, for example, with several other nodes and corridors of development defined along the busiest arterials.

Though the new rules promote pedestrian orientation, they offer developers plenty of leeway. "We want interaction of pedestrians with buildings," said Barbara Ginoulias, the director of comprehensive planning. "But we don't require buildings to come up front. We're trying to provide as much flexibility as possible." Van Gorp, of the city, is similarly hands-off: "We don't set minimum or maximum parcel sizes. We don't have height restrictions or setback requirements or minimum or maximum floor-area ratios. How much parking you supply is negotiable." The easygoing attitude counts on competition to deliver quality—generally a dubious assumption in real estate.

It's hard to imagine how this white-hot market will play out, especially as so many of the proposed projects have barely gotten beyond sketch stage. If interest rates rise quickly, the high-rise market may cool just as quickly as it heated up. But few people locally think it will. Such confidence derives from forecasts for ever-surging growth: 42,000 new jobs this year, according to Van Gorp, most of them in the Strip, where visitor numbers may swell to almost 40 million. The Strip economy now depends less on gaming and more on packaging gambling with shopping and entertainment. Nongaming revenues at Strip properties now outstrip gaming and are moving up.

Hypergrowth strains services and infrastructure. New schools open more than once a month yet still contend with overcrowding and long school years. Parks can't be built fast enough: One road project ends; it clogs; another begins. There are water worries and air-quality concerns (which could lead to the loss of

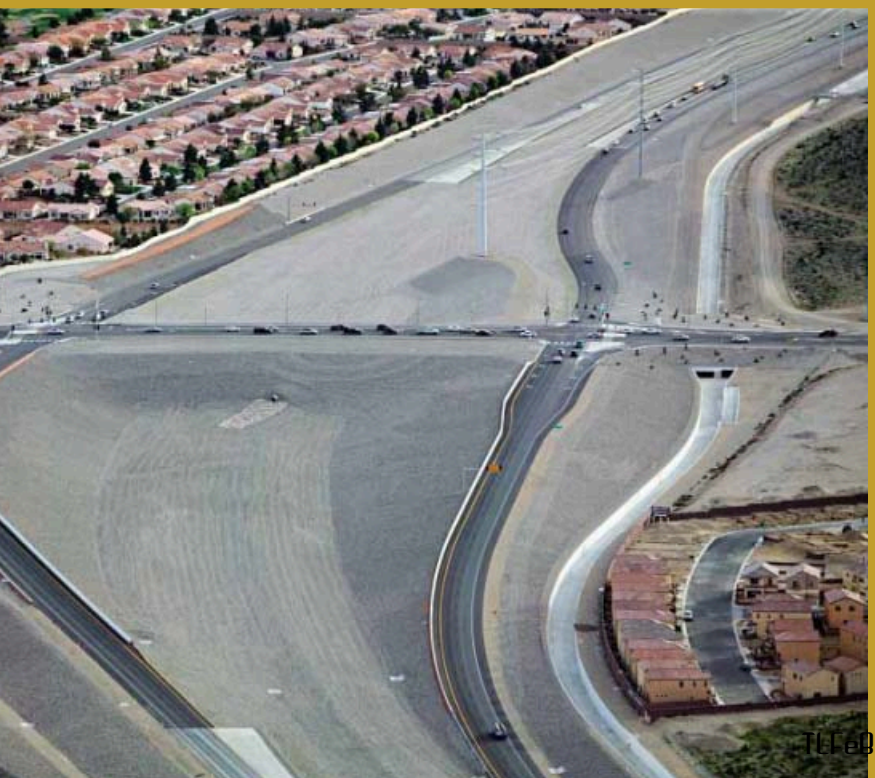




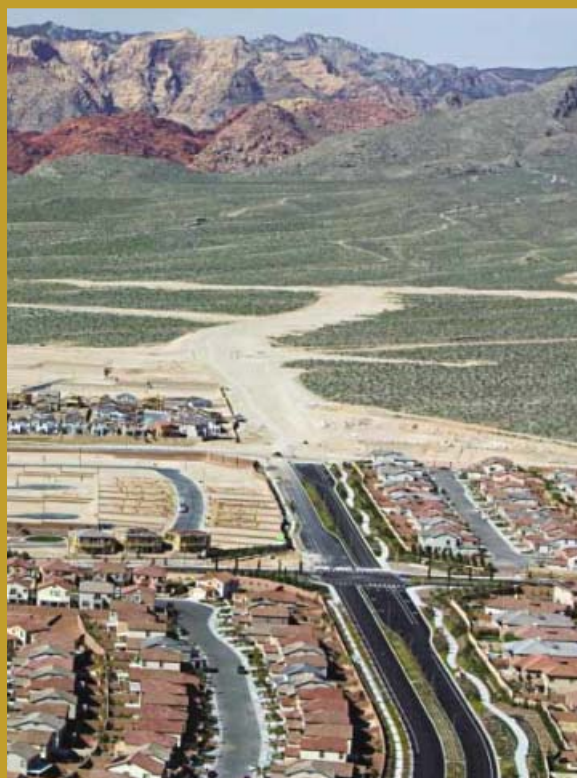


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At the city's southern edge, the ranchettes of Las Vegas's anything-goes era are being surrounded by high-density housing (above). A beltway 15 years in construction can't keep up with growth. The frontage roads (left) will become a full-fledged freeway by 2013. Growth is heading for the treasured (and protected) Red Rocks (right).



federal transportation funds). "If you live here, it feels as if the quality of your life is always declining," says Rothman. "Newcomers don't experience it the same way. If you came from Oxnard, California, you find it cheaper, with less traffic. Everything is newer, shinier, and it seems more fun."

An open-minded observer can't fail to be impressed by the city's can-do attitude in the face of a fast-changing and uncertain future. Of course, the city has numerous times tossed out the not-very-old for the entirely new. The Strip's glitter may be heedlessly borrowed and nostalgic, but no one worries about its inauthenticity. Faux is the local real.

**Signs of civilized life?**

"There is life off the Strip!" a local declared during a conference I attended some years ago. The vast majority of the city, where most people live, can look invisible, though, because it has no expression. The neighborhood social hub, where people shop, bowl, sit down for a restaurant meal, or catch a movie, is—what else?—a unit of the Station casino chain.

In the early 1990s, a series of local public libraries were celebrated nationwide, not just because the program's leader, Charles Hunsberger, brought in talents from all over (Antoine Predock, Michael Graves, Meyer Scherer Rockcastle with local firm Tate Snyder Kimsey). He also made sure the designs engaged people, the sharp local light, and the rugged landscape. Hunsberger programmed space for arts organizations, even ones not yet created, knowing the community would one day want them. Politicians crusaded against the libraries' supposed extravagance, tapping into a local ethos deeply suspicious of government. "When Hunsberger lost his job," commented Eric Strain, a local architect, "the community pulled back in terms of making design important." Yet the libraries remain the neighborhood's chief assertion of a civic life apart from the Strip. Subsequent library bond issues have failed, so the older buildings' arts spaces have largely filled with books.

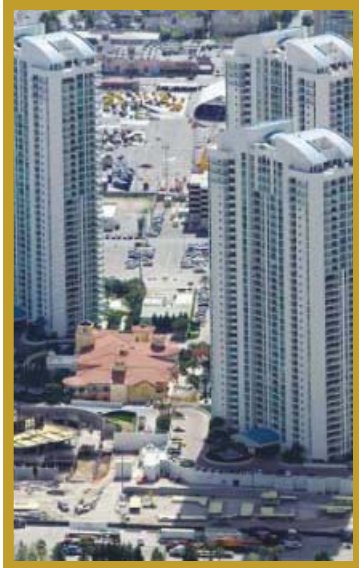
A more positive attitude to public work may be developing, evident in new work at the University of Nevada Las Vegas, where Strain teaches; a federal courthouse by Mehrdad Yazdani of CannonDworsky; a new judicial center by Tate Snyder Kimsey; and an interpretive complex planned for the Las Vegas Springs Preserve, by several architects led by Lucchesi Galati. Van Gorp hopes architect selection can soon begin for a planned performing-arts center downtown.

A conventional architect-designed civic identity may not easily fit Las Vegas's shape-shifting sensibility. "You don't worry about the past in Las Vegas," says Kubat. "You come here to make a future." In interviews, I heard a nostalgia for the historically layered gentility of older, greener, less-hard-edged places. There is a perpetual consideration of whether—notwithstanding the ubiquity of female cleavage at billboard scale—Las Vegas has yet become normal. For converts, its still unformed identity exerts a powerful pull. Cities have always been the place where people could shed their old skins and become someone new, and this city's very lack of identity makes it easy for it to reinvent itself every half decade or so. Kubat suggested that older places with a clearer identity, a layering of history, and a set way of doing things had lost an edge Las Vegas retains. "This place is very entrepreneurial: It rewards people who take risks, who make deals, who try something new." By contrast, in Baltimore, where Kubat used to work (with RKTL), "It wasn't easy to build if it was not a center-hall colonial." Will Las Vegas become too normal, losing in the process its heady sense of possibility and perpetual opportunity?

California once seemed to offer the chance, Kubat added, "to start new in the orange groves." Now the groves are gone and the state's high costs, highway gridlock, and hassles feed a steady stream of fed-up residents to Las Vegas. People say the city won't go the Los Angeles route, but it's unclear how it won't.

If you are looking for a conventional suburban refuge or an urban civility, you'll find little of either in Las Vegas among the never-finished roads and the perpetual imploding of the old in favor of the new. The place "exudes energy and accepts anyone," as Kubat says. The flip side is its transience, reflected in older neighborhoods rapidly filling with those who didn't make it here, or haven't made it yet. Schools cope with ever-shifting student populations and a high dropout rate. Adds Rothman, "For a lot of people, it's a court of last resort. That's motivating. But the allure of gambling, drinking—this culture of excess—exploits your weaknesses." Pawn shops are as ubiquitous in strip malls as fast food. For better *and* worse, Las Vegas is the closest you'll find today to the awe-inspiring chaos that accompanied the giddy growth of America's industrial-era metropolises. ■

## Growing Up





**To the casual observer, Las Vegas has plenty of room to grow, but the federal government has few massive tracts to release, so developers are heading skyward. Buyers snapped up units in the gated Turnberry Place (top), along the Strip, inspiring others to go high-rise. Local officials now encourage developers to include public access. The 73-story Ivana (yes, *that* Ivana), by the local firm JMA Architecture, could be the tallest residential building west of the Mississippi River (rendering, bottom).**



RENDERING: COURTESY JMA ARCHITECTURE (THIS PAGE, BOTTOM LEFT)



TLFeBOOK





To keep costs down (and to limit the use of costly water), Las Vegas builders long ago abandoned the suburban norm of quarter-acre lots, even on this golf-course development (left and right). New growth occurs on ever-tighter lots (above), at up to 14 houses per acre.





View of the Strip shows an increasingly dense urban fabric. Cirque du Soleil's KÀ (opposite) offers another kind of spectacle.

# What's left to learn

TLFeBOOK

# from Las Vegas?

**By Clifford A. Pearson**

Thirty-three years after Robert Venturi, Denise Scott Brown, and Steven Izenour shook up the architectural establishment with *Learning from Las Vegas*, no one bats an eye when some highbrow architect professes a love of the Strip. Like profanity and nudity on cable TV, the gigawatt kitsch of the nation's most famous commercial boulevard has become just another buzz in the multibillion-dollar white noise generated by our pop-culture dream machine. We live in a baroque era when companies of all kinds compete for our attention with ever-more-elaborate displays of visual, auditory, visceral, even olfactory stimulation. We've seen it and heard it all. Architects no longer dismiss the Vegas Strip; they just yawn and demand, "Tell me something I don't already know."

The latest-greatest mentality has been steadily upping the ante in Vegas for years now. Way back in 1989, Steve Wynn built the 3,000-room Mirage Hotel-Casino with a dolphin pool, white-tiger habitat, and a volcano that erupts on schedule, all for a mere $630 million. Four years later, the 5,000-room MGM Grand broke the $1 billion mark. And just last month, Wynn opened the doors of his eponymous gambling-and-entertainment resort, a 42-story, copper-glazed complex with 2,700 hotel rooms; luxury retailers such as Louis Vuitton, Dior, and Manolo Blahnik; a branch of New York's too-cool bistro Balthazar; and outside, a 150-foot-tall mountain with a five-story waterfall. Price tag: around $2.7 billion.

The blurring of high and low cultures, art and commerce—a phenomenon that seems almost to define our society today—happens in Vegas with a vengeance. Think of Rem Koolhaas's Guggenheim-Hermitage at the faux-Renaissance Venetian Resort Hotel Casino. Or deluxe French chef Alain Ducasse's Mix restaurant at THEhotel at the Mandalay Bay complex. Cirque du Soleil, which started in Quebec in 1984 with a bunch of avant-garde street performers, has morphed into Vegas's reigning spectacle manufacturer, with four permanent productions in town, the latest of which, KÀ (pictured above), cost $165 million to build and produce .

Of course, Venturi, Scott Brown, and Izenour talked about all this in their book, though the scale, scope, and intensity of the sensory and cultural juxtapositions in the Vegas of 1972 pale in comparison to the experiential collage encountered by visitors today. So is 21st-century Vegas just the old one on steroids?

In some intriguing ways, the Las Vegas of 2005 has become a different beast, not just a bigger one in a glitzier costume. The Vegas described by Venturi and company was a cartoon city, its main strip a line in the desert, a scenographic procession of decorated sheds and "ducks" best appreciated in a car moving at 40 miles an hour. (As defined by the Venturi gang, "ducks" are buildings in the shape of their function, the most famous of which is the roadside store in Long Island that sells freshly killed ducks.) Back in 1972, Las Vegas was a two-dimensional experience—colorful, but flat as a billboard. There wasn't really much behind the neon signs, except oceans of undifferentiated gambling space and all-you-can-eat buffet pens. Today, Las Vegas has developed its third dimension, offering fun that goes beyond the facade. In fact, the most interesting architectural experiences now occur deep within the sprawling casino complexes—in the remarkable restaurants, bars, lounges, and stores that have been designed by big-name architects from around the country. "What you find now are pockets of high design tucked inside huge buildings," says Adrian Jones, a senior designer in the local firm Jones Greenwold Architecture. Jones, who grew up in Nevada, is part of the second generation of his family involved in the firm and is taking it in a new direction, away from suburban-developer work and into the edgier realm of attention-getting interiors.



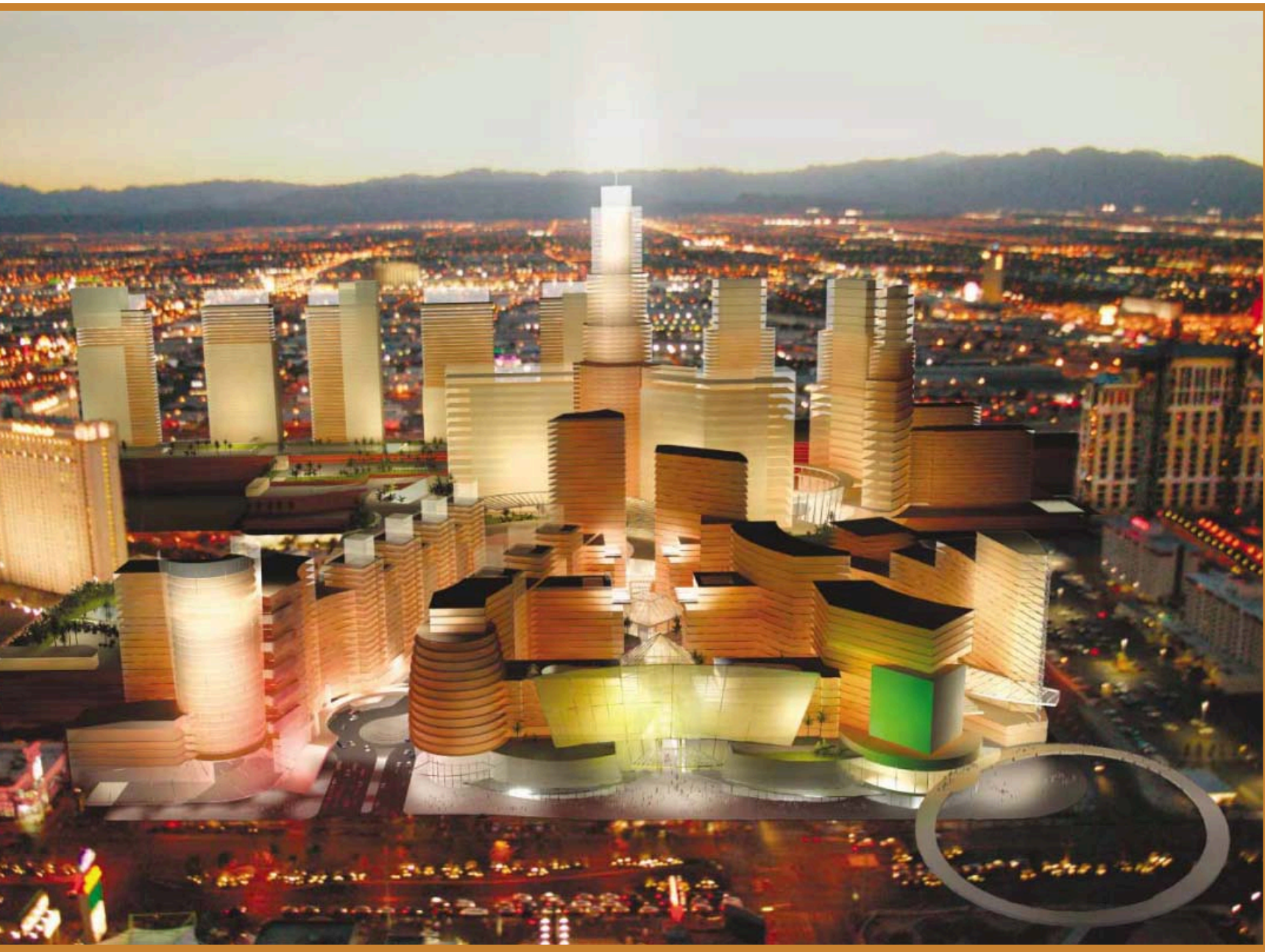
Recently, Jones completed a very hip wine bar and store, 55 Degrees, at Mandalay Bay, which features a sleek, clear-resin tasting counter, fiberglass wine racks, and an aesthetic as crisp as a chilled Sancerre. New York designers such as Adam Tihany, Tony Chi, and Jeffrey Beers are busy doing restaurants all over town, and even major architects such as Thom Mayne have designed innovative interiors such as those for the restaurants Lutèce and Tsunami at the Venetian hotel [RECORD, September 2000, page 144]. "The theming that you saw in the 1980s and '90s is out," states Jones. "We're not doing Bellagios anymore." Instead, designers are finding inspiration in fashion, the media, and global brands such as Louis Vuitton that are using design to create modern identities, explains Jones.

This growing sophistication in taste reflects an increasingly urban environment. Thirty years ago, all of the major casinos on the Vegas Strip sat behind enormous parking lots, rising like giant drive-in movie screens to beckon motorists with flickering neon images. Today, the casinos have moved parking into garages behind the hotels and engage the glamorous street with eye-popping attractions such as exploding volcanoes, danc-

PHOTOGRAPHY: © ALEX S. MACLEAN/LANDSLIDES (OPPOSITE); TOMAS MUSCIONICO (THIS PAGE)



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Project CityCenter (above) promises a mixed-use neighborhood on the Strip. The monorail (left) now connects seven casinos and the convention center. Loft 5 (right), by Jones & Greenwold, will offer urban-style condos. Wynn Las Vegas (opposite, top) opened in April. Chef Alain Ducasse opened Mix (opposite, bottom) in THEhotel.





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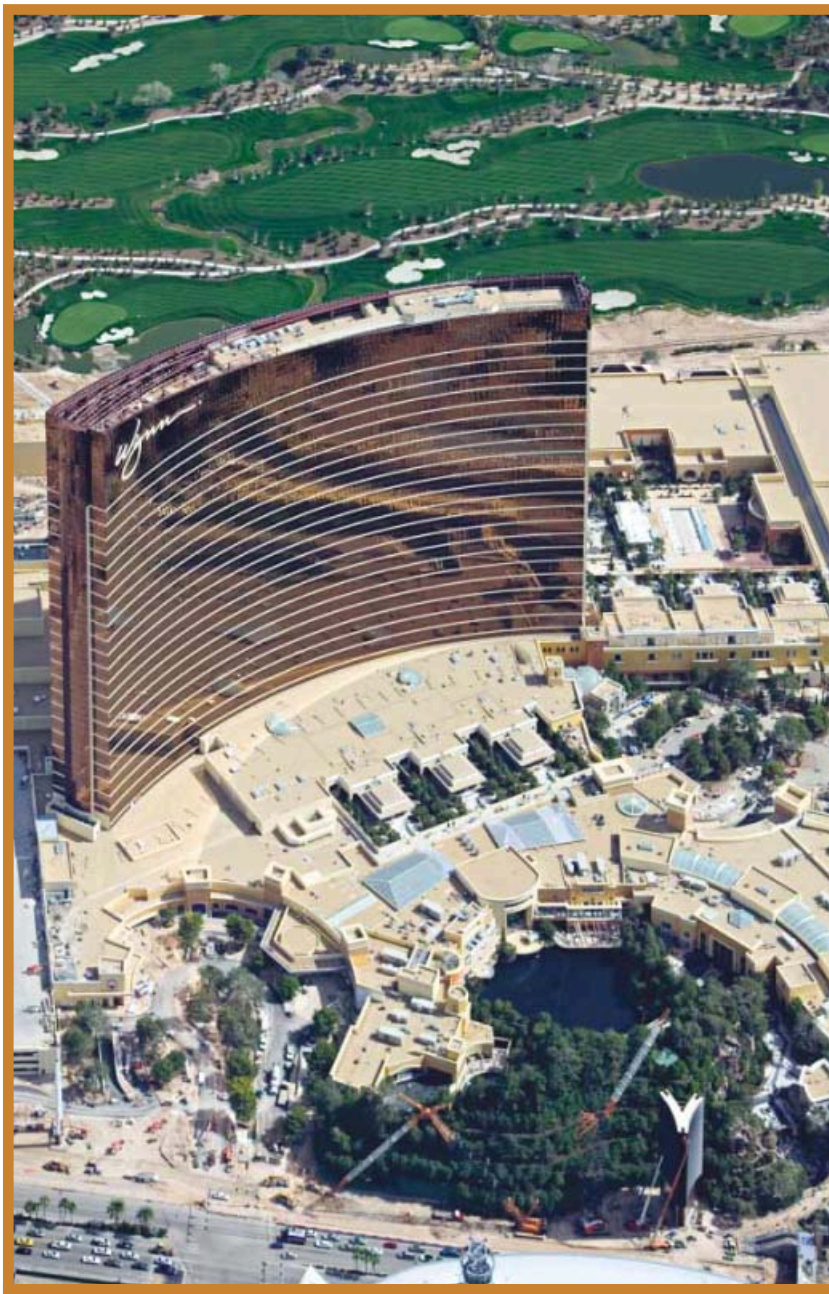
ing fountains, and battling pirate ships. People actually walk along the Strip now to catch all the free shows and then pop into a casino or shopping complex for some air-conditioning. Enjoying the view at 40 miles an hour isn't really an option anymore, since the traffic on the Strip at almost all hours is so bad. Luckily, a monorail runs for about four miles behind many of the casinos, connecting them to the convention center and offering a mass-transit option in what had been the most suburban of places. "The monorail is creating a new front door for all these casinos," states J.F. Finn, a principal at Gensler, which helped put together the financing for the private rail line and designed several of the stations. "It's going to open up a lot of development on what had been the back side of these properties," explains Finn. So the Strip is feeding growth beyond its boundaries and may become the spine of a traffic network, especially if the monorail is extended to the old downtown and the airport.

In the past, locals avoided the Strip like the plague. Hordes of overweight tourists, miles of overpriced shops, and acres of gaming tables provided plenty of good reasons to steer clear. But now a number of developers are building apartment towers either on or close to the big boulevard, betting that people want to live close to the action. In one of the biggest gambles in recent years, MGM Mirage is developing a 66-acre site on the Strip south of the Bellagio as a mixed-use "city within a city" that will feature a series of condo towers with 1,650 residences, 550,000 square feet of retail, dining, and entertainment space, and a 4,000-room casino hotel. "The idea is to build a neighborhood, a high-density urban environment with lots of pedestrian activity and outdoor spaces," says Peter Cavaluzzi, the design principal at Ehrenkrantz, Eckstut & Kuhn Architects, which is designing the master plan for the development called Project CityCenter. "We want to create a real place, not an 'attraction,'" explains Stanton Eckstut, the principal in charge of the project. "This represents a maturing of Las Vegas as a city,"

## "IS THE ROWDY TOWN STUCK IN ITS URBAN ADOLESCENCE READY TO GROW UP?"

adds Eckstut. "It's about creating urban fabric and permanence." Gensler is serving as executive architect for the $6 billion-project, coordinating the work of what it is expected will be a number of different architects designing various pieces. The developer has already signed up Cesar Pelli to do the hotel.

Who would have imagined that the designers most responsible for New York's Battery Park City would hit the jackpot in Las Vegas? Does this really mean that the rowdy town seemingly stuck in its urban adolescence is ready to grow up and behave? Well, maybe. The days when the big casinos would essentially give away food, drinks, and hotel rooms to entice people to gamble are already gone. Now the casinos are making about the same amount of money on shopping, dining, entertainment, hotel rooms, and property development as they do on gaming. "They're realizing that they're really in the real estate business," says Gensler's Finn. It's a whole new mentality that will affect all aspects of the city's built environment. What architects need to learn from Las Vegas today is how America's quintessential suburban place can go urban. ■





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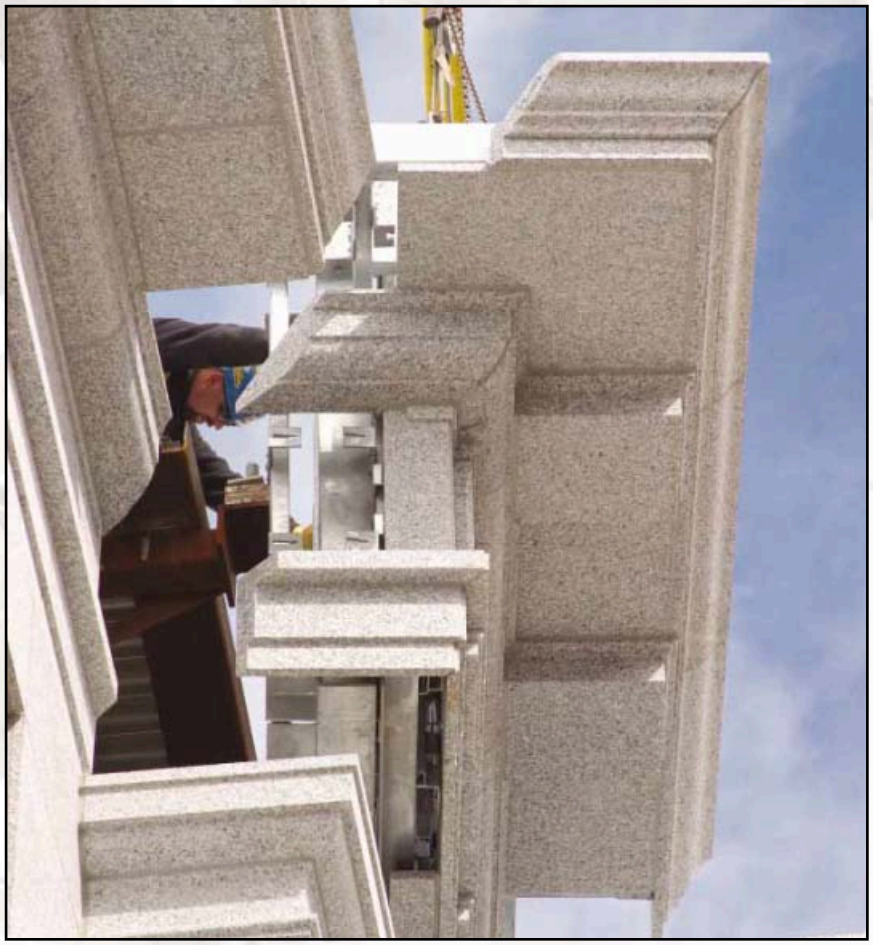
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The marble-shingled skin (below and opposite) gives the building a solid appearance and belies the fact that every space is light-filled with views in all directions.

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# At Ohio State University, Mack Scogin Merrill Elam's new KNOWLTON HALL brings the design process to the larger academic community



PHOTOGRAPHY: © TIMOTHY HURSLEY

**By Sara Hart**

Last fall, the new Knowlton School of Architecture (KSA) at Ohio State University (OSU) opened its doors to 550 undergraduate and graduate students, matriculated in three design fields—architecture, landscape architecture, and city and regional planning. The importance of this event cannot be overstated. The architecture school finally got the state-of-the-art facility that a high-profile, innovative program deserves.

The process was arduous and ambitious. Atlanta-based firm Mack Scogin Merrill Elam Architects survived the short-list judging to win the commission and was then instrumental in selecting Wandel & Schnell Architects (now WSA Studio) as its local collaborators. When the team was assembled, the challenges came into focus. The original budget couldn't accommodate the school's goals. The university initially settled for renovating the existing school and building a major addition, which would bring the three disciplines together for the first time in decades. The architects dutifully obliged with a scheme that worked well enough, but it would have produced merely an expensive compromise that would only be adequate for another 10 or so years.

So they went back to the proverbial drawing board, fortified with more money from the major donor—real estate developer and alumnus Austin E. Knowlton—and designed a 135,000-square-foot structure that consumed the entire site, which was necessary in order to absorb a hefty program—45 studios, 65 offices, computer labs, an archive, a 30,000-volume library, a 200-seat auditorium, and a state-of-the-art model shop with CNC machines for model fabrication.

The site, on the northwestern edge of the old campus, is architecturally eclectic, to say the least. Its most celebrated neighbor is the football stadium. Home to the nationally prominent OSU Buckeyes, it looms large to the west, just beyond its yawning parking lot. Across the other busy avenue to the north, the Fisher Business School occupies an earnest, vaguely Postmodern redbrick complex. Secondary borders are formed by coarse concrete parking garages to the south and low-rise laboratory buildings to the east. This edge is traversed by a major pedestrian thoroughfare that brings students close to the architecture school—a collateral benefit to the overall strategy.

Mack Scogin Merrill Elam approached this project understand-

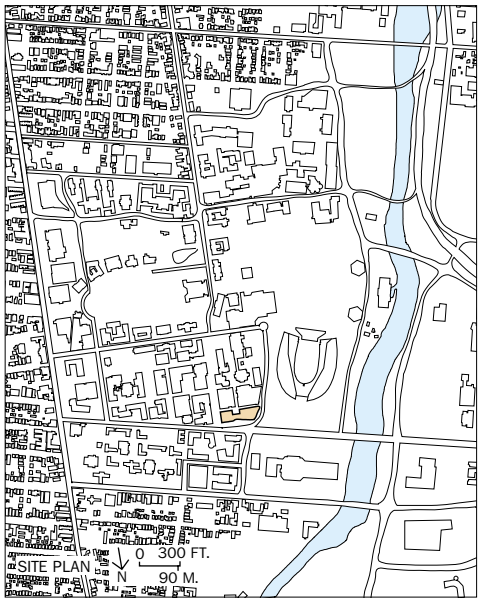
**Project:** *The Austin E. Knowlton School of Architecture, Columbus, Ohio*
**Client:** *The Ohio State University*
**Architect:** *Mack Scogin Merrill Elam Architects—Mack Scogin, AIA, Merrill Elam, AIA, partners; David Yocum, AIA, project architect; Brian Bell, AIA, John Trefry, Penn Ruderman, Barnum Tiller, Cecila Tham, Jeffrey Collins, Kevin Gotsch, Margaret Fletcher, design team*
**Architect of record:** *Wandel & Schnell Architects—Robert Wandel, AIA, partner; Cissy Wong, AIA, project architect; Alan Sulser, Ivan Amy, Lannetta Vader, Yanitza Brongers Kristen Poldemann, design team*
**Consultants:** *Lantz, Jones & Nebraska (structural); HAWA Consulting Engineers (m/e/p); Bird & Bull (civil); Wiss, Janney, Elstner (rain screen)*
**Landscape architect:** *Michael Van Valkenburgh Associates*
**General contractor:** *P.J. Dick*





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**The architecture school (shown in yellow at left) is sited on the northwestern edge of the old campus. This location is dramatically anchored by the OSU Buckeyes' football stadium. The building's logic is revealed by circumnavigation. The architects carved slots out of the mass to bring in natural light and create outdoor spaces. The major donor gave five enormous Classical columns to weigh heavily on one of the public spaces (right and opposite).**





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ing that the OSU architecture school had a mission beyond giving form to a well-respected architecture program. Robert Livesey, director of the school, wanted an open atmosphere with spaces, including the auditorium, available for use by other programs within the university. Most architecture schools don't invite the casual visitor into their cloistered confines. Unlike other disciplines, architecture generally offers instruction via the studio system—a vibrant, stressful construct that is disorderly without being disorganized. Knowlton Hall was intentionally conceived to flaunt that distinction, while simultaneously and purposefully creating a transparent environment in which the design process was constantly on view. "We wanted to make the building a model for the Knowlton School students and the university," explains Livesey. "We wanted to show them the impact that architecture could have."

Principal Mack Scogin admits that he packed the section. As a matter of fact, the plan, by contrast, is deceptively ordinary—orthogonal and judicious. Form and function collide in the section. The primary, ceremonial procession through the building follows gently inclined ramps. It offers views in multiple directions, which appear and disappear along the way through translucent layers or openings in the unfinished poured-in-place concrete walls and floors. Discrete spaces are formed, not so much by walls, but by solids and voids, level changes, staircases and columns, and ascending and descending ceilings. Each space is illuminated from multiple sources—skylights, clerestory windows, spotlights, and custom fluorescent light boxes.

One is tempted to invoke Piranesi when describing such complexity, but this comparison, if taken literally, suggests disorientation. Nothing could be farther from the truth. Knowlton Hall is a lucid building. The architects focused on slicing and shearing the longitudinal section until the spaces resonated. This is what Scogin calls the "critical imperative." He acknowledges that they resisted any inclination to create an iconic object—one that might separate the architecture school stylistically from the rest of the campus, but perhaps forfeit its potential to inspire from within.

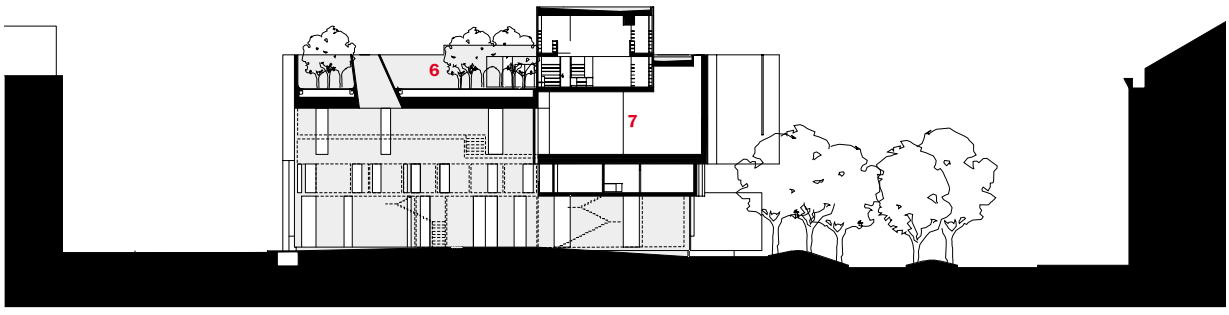
And yet, there is a another reason why the architects turned inward. Rare is the commission that doesn't include odd requirements. In the case of the KSA project, the architects had to address the major donor's insistence on white marble cladding. Despite its association with permanence, marble is not a durable material, especially when applied as a thin veneer. It requires a lot of maintenance due to its susceptibility to environmental degradation. The architects offered several alternatives, but the donor remained adamant regarding the marble, even though there was no such precedent on the OSU campus. The solution was ingenious. The building is protected, hidden actually, by a rain screen, which is independent of the curtain wall that actually defines the envelope. The screen is composed of marble shingles beveled so they overlap and clip together without any caulked joints. In the event of breakage, a shingle can be easily replaced. The overall effect is an illusion of impenetrability, when the truth is just the opposite.

The university elected Michael Van Valkenburgh to landscape the perimeter. However, since the building absorbed most of the site, there was little left to landscape. "Michael had to grab the edges of the site," explains Scogin. Indeed, Van Valkenburgh took what land was available and com-

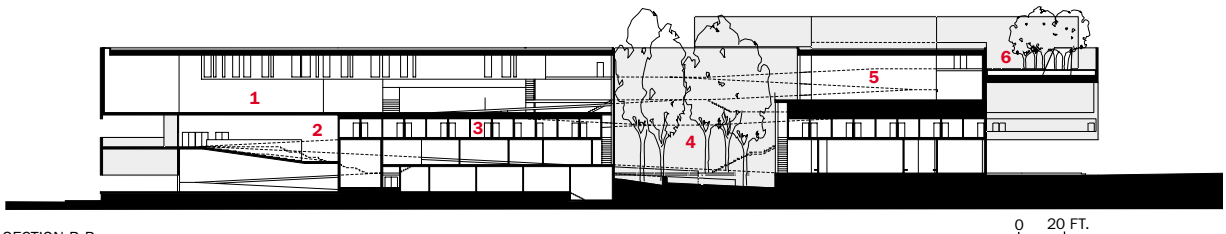


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1. *Planning studios*
2. *Auditorium*
3. *Faculty offices*
4. *South court*
5. *Gallery*
6. *Roof garden*
7. *Studios*




SECTION A-A




SECTION B-B



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**The largest of the many slots that penetrate the building encloses the south court on three sides (opposite). While dramatic, the curtain wall is in reality an inexpensive storefront system. Studios occupy a variety of spaces with views up and down into other studios, while light trickles in from all directions (right).**

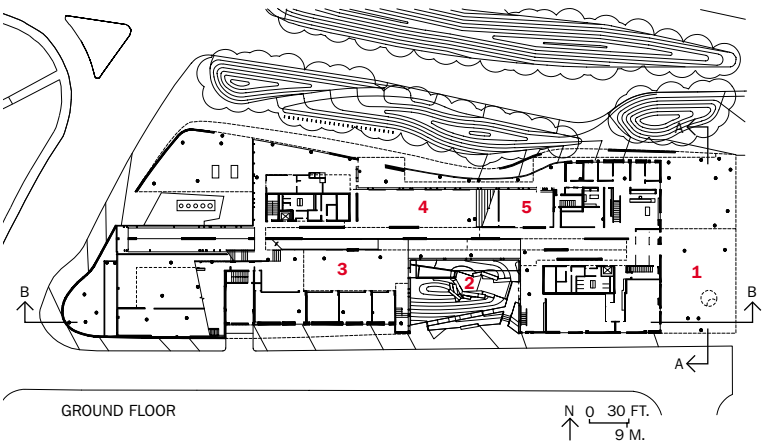


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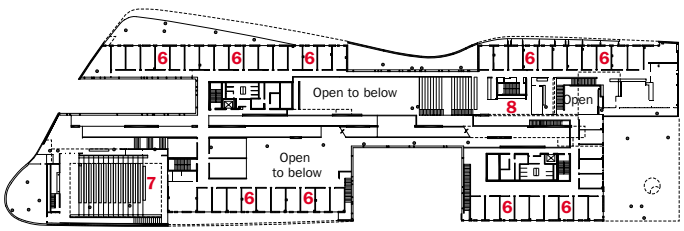


**A strut supporting lighting (left and opposite, bottom) runs diagonally on the first level, linking the jury spaces on the south to those on the north (achieving in plan what the ramps do in section). It also follows one of the diagonal lines of the structural columns. The library (opposite, top) is a two-story volume with a mezzanine that can be reached either from the lower level or across bridges.**

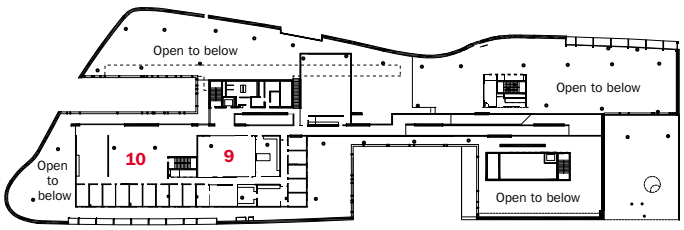
1. *Forecourt*
2. *South court*
3. *Jury space and lecture rooms*
4. *Center space*
5. *Gallery*
6. *Faculty offices*
7. *Auditorium*
8. *Jury space*
9. *Computer labs*
10. *Planning studios*




GROUND FLOOR




SECOND FLOOR




FOURTH FLOOR



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posed a prelude to the internal experience with berms and ramps, which stand in elegant contrast to the flat hardscape of neighboring buildings. Within the exterior slots created by the building, ramps turn and rise from the sidewalk until they reach the entrance.

As commissions for building types go, the design of a high-profile, multitasking architecture school must be the most intimidating assignment for an architect, whose name will be forever attached to it. There are several architecture schools in the U.S. with impressive pedigrees, and even they aren't immune from persistent criticism. After all, the designer may have a single client, but he or she has as many critics as there are students and professors in residence. Knowlton Hall should raise the bar for architecture and campus development for the next generation. At the end of the day, it's the students who benefit most, and that's the true mark of success. ■

**Sources**
**Rain screen:** *Vermont marble*
**Metal-and-glass curtain wall:** *YKK and Centria*
**Built-up coal tar roofing:** *Kalreuth Roofing & Sheetmetal*
**Posttensioning:** *P.T. Systems*
**Glazing:** *PPG Solarban 60*
**Skylights:** *Naturalite Skylight Systems*
**Elevators:** *Thyssenkrupp Elevator*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



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A seemingly random pattern of windows and grills on the south facade is actually based on a repeating module over a six-part grid (this page). The physicists' offices look onto the serene south shore of Silver Lake (opposite).

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# At the **PERIMETER INSTITUTE** in Ontario, **Saucier + Perrotte Architectes** pair darkness and light to celebrate the mysteries of physics

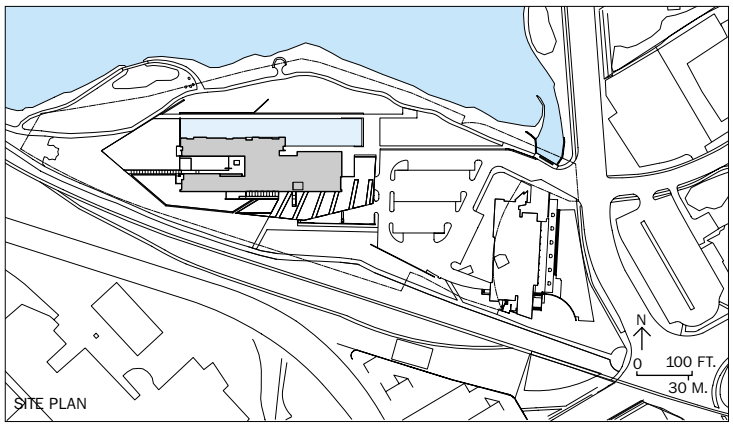




**By Rhys Phillips**

Twenty-five years ago, the corner of Caroline Street and Father David Bauer Drive in the small Ontario city of Waterloo was a jumble of old industrial buildings, vacant land, and railway tracks coexisting uncomfortably along the southern edge of Waterloo Park's Silver Lake. In the mid-1980s, architect Barton Myers skillfully transformed a number of 19th-century brick distilleries into the Seagram Museum, which quickly became an icon of Canadian Postmodernism and initiated a metamorphosis of the area. The museum whetted the city's interest in signature architecture, and a major competition for the Canadian Glass and Clay Gallery soon followed; the winning project by Patkau Architects opened in 1995 to critical praise. Last year's opening of the Perimeter Institute for Theoretical Physics, by Saucier + Perrotte Architectes, marks the third major architectural addition to this once-frayed boundary of Waterloo's modest commercial core. This remarkably expressive building both responds to its intriguing site and captures the institute's very raison d'etre in built form.

*Rhys Phillips has been writing about Canadian architecture for more than two decades. In 2003, he was made an honorary fellow of the Royal Architectural Society of Canada.*




SITE PLAN

**Project:** *Perimeter Institute for Theoretical Physics, Waterloo, Ontario, Canada*
**Architect:** *Saucier + Perrotte Architectes—Gilles Saucier, prinpical in charge; André Perrotte, project architect*
**Engineers:** *Blackwell Engineering (structural); Crossey Engineering (m/e/p); Stantec Consulting (civil); Acoustics Engineering (acoustics)*
**General contractor:** *Eastern Construction*

PHOTOGRAPHY: © MARC CRAMER, EXCEPT AS NOTED; COURTESY SAUCIER + PERROTTE (THIS PAGE)



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The office bays, articulated in the vertical plane to form a unique ensemble of spaces, rest on a base of concrete supports extending from the main structure (this page).

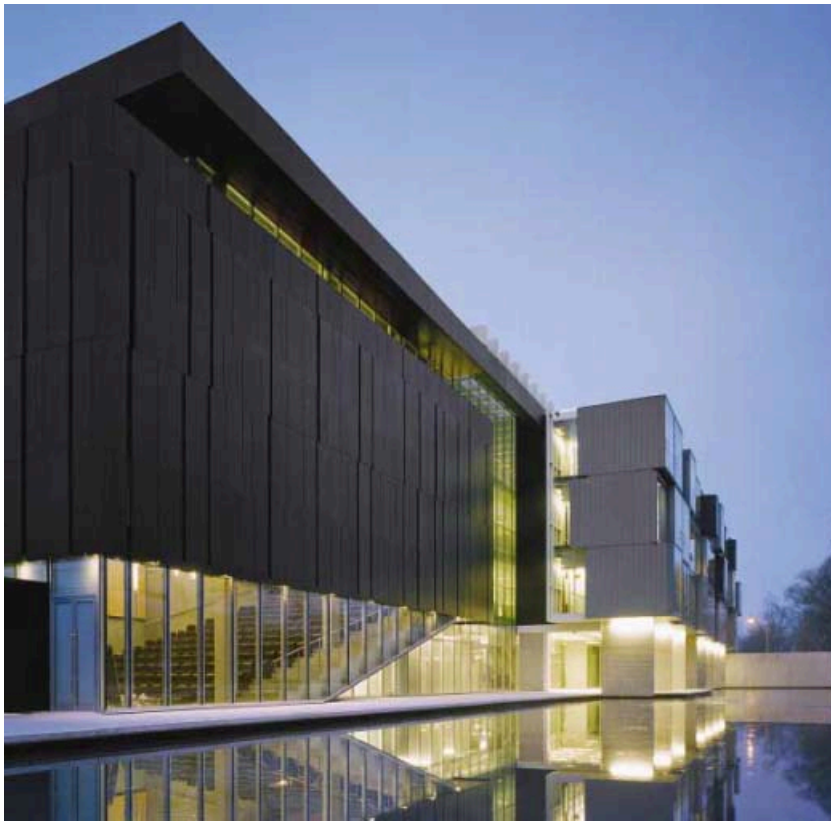


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**The ambiguity of the city facade (left) was inspired, Saucier says, by the mysterious nature of physics. Black metal panels wrap the lecture hall at the east end of the building (below left). At night, the institute shimmers in reflected light (below).**



Established in 1999 by Mike Lazaridis, founder of the successful high-tech firm Research in Motion, the Perimeter Institute is a private, not-for-profit think tank that works with 28 Canadian universities to attract scientists who study cutting-edge topics in quantum physics. The client, seeking a unique building that would help lure top scholars, obtained a list of five firms recommended by the University of Toronto's school of architecture. Though the institute planned to conduct a two-stage competition of interviews followed by design submissions, they hired Saucier + Perrotte promptly after the firm's interview, pleased with its approach to the program and site.

Principal Giles Saucier recognized that Perimeter needed an ensemble of spaces that enabled both solitary creativity and group synergy. "Researchers require places of splendid isolation," he says, "but also comfortable places to make contact, both formally and informally." Such a dichotomy also exists at the building's site, which sits between the quiet realm of the lake and park and a more active sphere of urban movement. Saucier wanted the scientists to be engaged with both of these external worlds, as well as with each other.

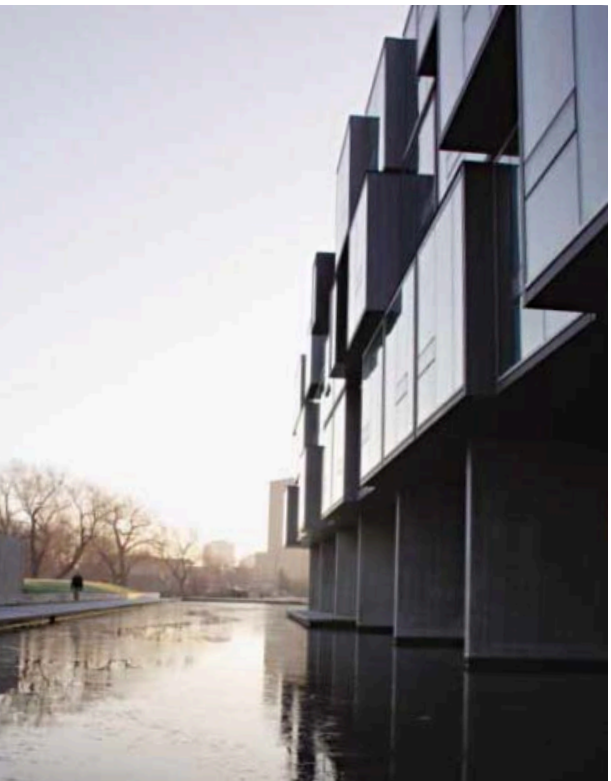
Early in the design process, Saucier attended a lecture—largely incomprehensible to him, he laughingly notes—that explored the complex synaptic connections within the brain. As he listened, he drew the lines of this connection, which in the building became physical representations of changing perceptions. But landscaping came first. The institute is built on top of an old waste-disposal site, so the architects couldn't excavate a foundation. "We started by drawing a single line representing the division between the site's two worlds," says Saucier. This line was then extrapolated to create what Saucier calls "an erupting ground plane," where the earth appears to have been peeled back, forming a landscaped berm on the north portion of the site and a grass-topped podium on the south side. These forms are defined further by raw, imposing concrete walls. Along the lakeside to the north, the wall holds back the berm and shelters a large reflecting pool and terrace, while from the cityside, visitors must penetrate the powerful wall and podium to reach the south entrance.

Into the trench formed by the berm and podium the architects placed a concrete-framed structure on a pad at grade: two slim, parallel office and administration wings, fully glazed along their facing facades and connected at the east end by a perforated black metal box that appears to float on a first story of highly transparent glass. Through this glass, a 205-seat lecture hall, elegant in its rich simplicity, is visible. A glass-roofed atrium, filled with northern light, sits between the office wings and the lecture hall. At the mezzanine level, the atrium opens onto



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**The courtyard that separates the physicists' offices wing from the administrative wing (left) is spanned by footbridges that encourage casual interaction and emphasize exterior views of the lake and the city. The north entry sequence along the lecture hall and reflecting pool provides a contemplative path into a building designed for big thinkers (below left).**



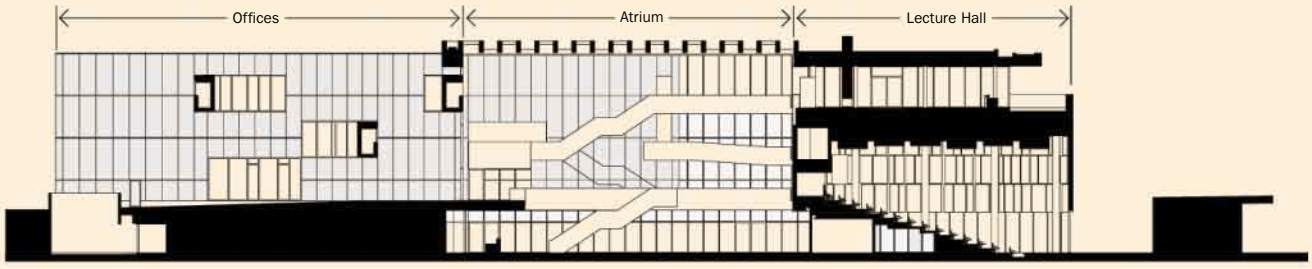
a grassy courtyard and reflecting pool, giving the space a piazzalike feel.

The building's south elevation, a three-level facade clad in anodized aluminum and punched and dented with a pattern of windows and highly polished stainless-steel mechanical grills, presents the city with an abstracted image that reflects the enigmatic world of physics itself, yet is open enough to invite exploration. Three slightly extruded boxes mark interior passages that become bridges spanning the courtyard, eventually emerging out the north elevation. The bridges emphasize a telescopic contact with the landscapes to the north and south, and also serve as informal spaces for conversation. The north facade on the park, which stands in contrast to the institute's city face, comprises a transparent series of extruded zinc-and-glass boxes containing private offices for the physicists. These offices were kept simple, quiet, and unadorned, with one side wall of concrete and the opposite wall a floor-to-ceiling blackboard.

Like science itself, the building's layers open up to reveal relationships that might seem obscure from a distance. Interior spaces are remarkably lucid, and the circulation provides a continual interplay of visual connections with the city, park, and lake, as well as within the building itself. Cool, crisp materials—such as clear, fritted, and reflective glass, as well as metal and concrete—are warmed with touches of rich

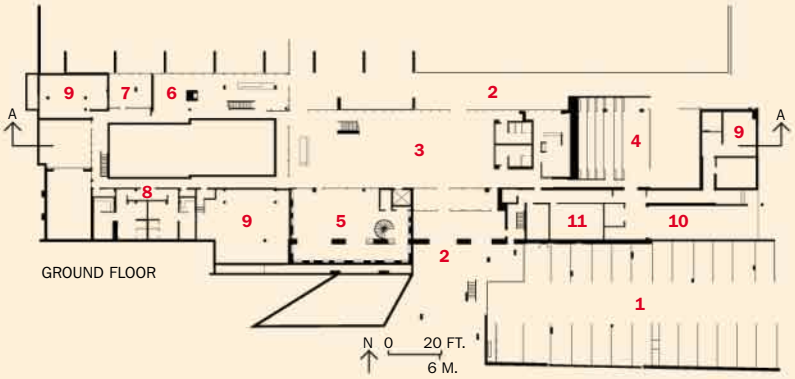
PHOTOGRAPHY: COURTESY SAUCIER + PERROTTE (BOTTOM)

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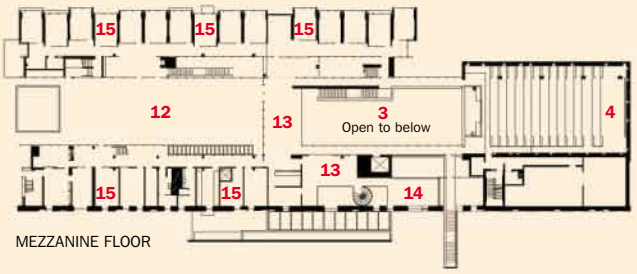



SECTION A-A

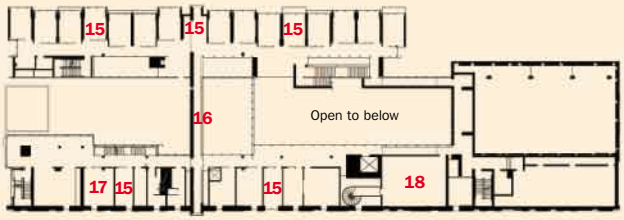
1. *Parking*
2. *Entry*
3. *Central atrium*
4. *Lecture hall*
5. *Library*
6. *Lounge*
7. *Gym*
8. *Changing rooms*
9. *Mechanical*
10. *Loading dock*
11. *Storage*
12. *Courtyard*
13. *Mezzanine*
14. *Reading room*
15. *Office*
16. *Footbridge*
17. *Meeting room*
18. *Seminar room*
19. *Café*
20. *Kitchen*



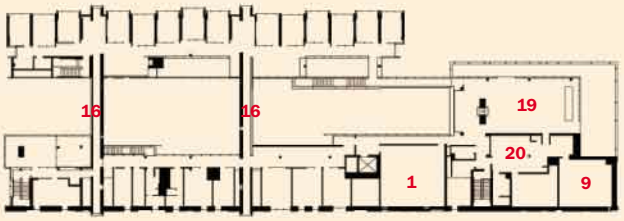

GROUND FLOOR




MEZZANINE FLOOR

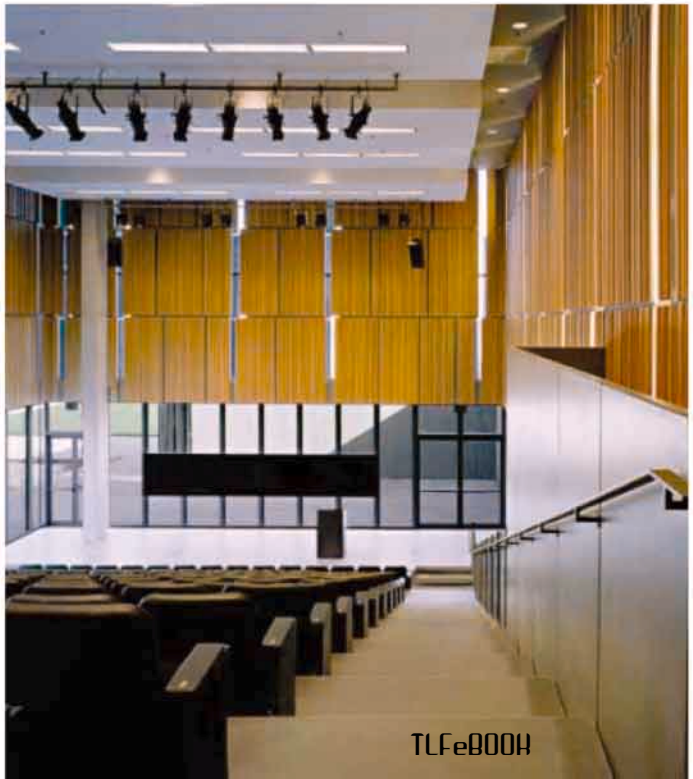


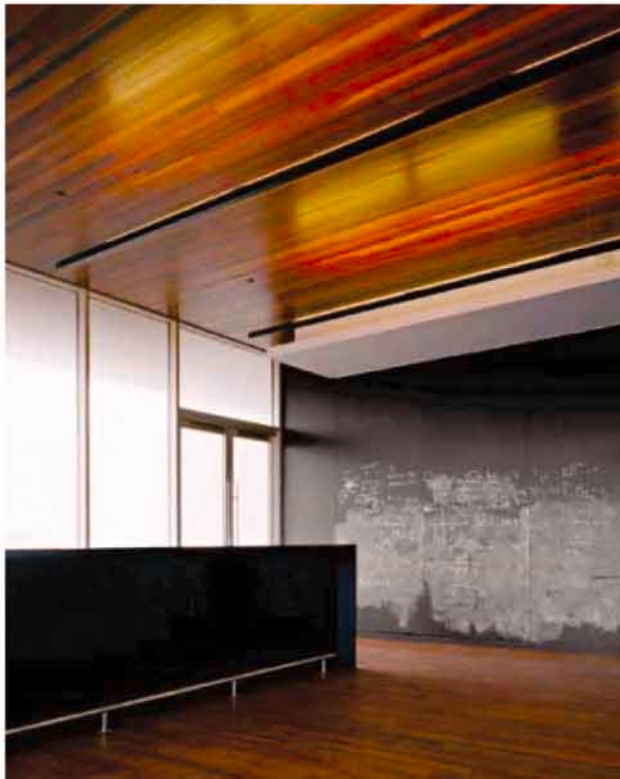

SECOND FLOOR




THIRD FLOOR

**The institute's scholars gather frequently in the high-ceilinged lecture hall (near right), where layers of wood improve the acoustics and warm the walls of concrete and glass. Each physicist's office has a floor-to-ceiling blackboard for scribbling notes and working through proofs and theories (far right).**





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wood, such as white oak and Brazilian ibe.

If there's a weakness to be found, it's with the entry sequences. The stark simplicity of the south entry, and its immersion in deep shadow, are intended to provoke a sense of mystery and hence public curiosity. Unfortunately, this approach is virtually lost to the urban context because of the railroad tracks that cut off the building from the street. Therefore, most people enter into the atrium on the north side. The walk to this entry is a sensory delight, taking one through the berm and past the glazed lecture hall and reflecting pool. But the parking lot from which it originates is a rude interjection between the institute and the finely articulated west facade of the neighboring Glass and Clay Gallery.

Despite these drawbacks, the Perimeter Institute succeeds in its mission. It's not only a protected space for high-level thinking; its adroit siting and provocative juxtaposition of materials promote dialogue, both within its walls and with the public, about a world few of us readily grasp. ■

**Sources**

**Metal/glass curtain wall:** *Fulwal; VM Zinc; Ontario Panelization; Merit Glass; Roof Tile Management*
**Aluminum windows:** *Fulton*
**Glazing:** *Trulite; Viracon; Prelco*
**Skylights:** *IBG Canada*
**Auditorium seating:** *Irwin*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

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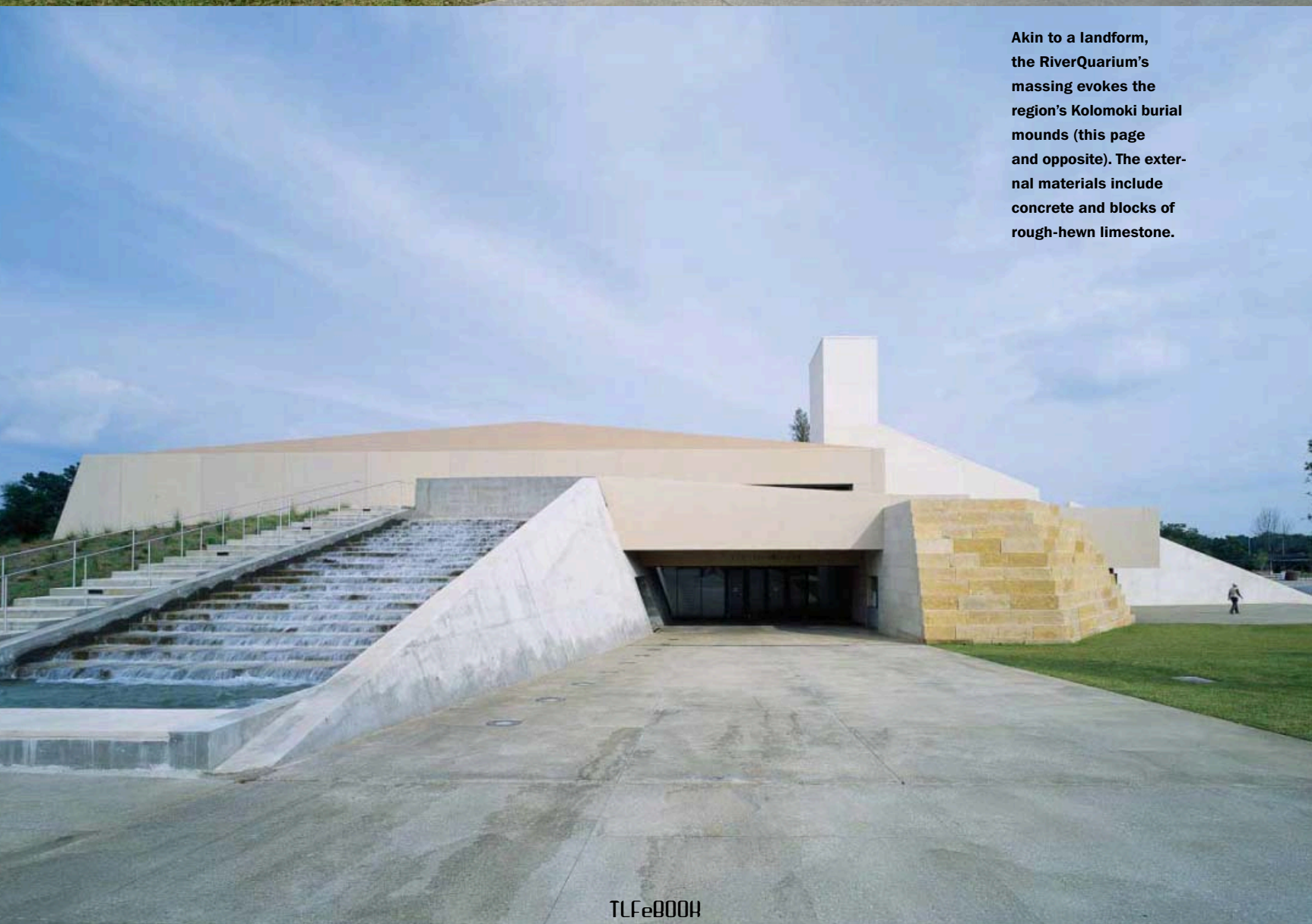


A series of zigguratlike concrete stairs appear to float against the opalescent glazing along the corridors of the office wings (opposite, top and bottom). An assemblage of black metal panels form another focal point in the atrium, like an abstract work of art (this page).



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**Akin to a landform, the RiverQuarium's massing evokes the region's Kolomoki burial mounds (this page and opposite). The external materials include concrete and blocks of rough-hewn limestone.**

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# After torrential floods, Albany, Georgia, reinvents itself with a centerpiece by Antoine **Predock**: a **RIVERQUARIUM** celebrating local aquatic culture

**By Sarah Amelar**

The site's at one of those weird crossroads where Smalltown, U.S.A., meets a powerful natural system," says architect Antoine Predock, FAIA, of his recently completed Flint RiverQuarium, a building that mediates between the city of Albany, Georgia, and the abundant water flowing through it. The curious juxtaposition of modest urbanism with undisturbed aquatic ecology has played an essential role in this town of not quite 100,000 people, 85 miles north of Tallahassee, Florida—even as the relationship between municipality and river fluctuated over time.

An asset and occasionally a source of ruin, the Flint River originally attracted the area's native Creek Indians, who settled along its banks. In 1836, the same 350-mile-long water course inspired Nelson Tift to launch a river freight business here, founding the city, which he named after the then-bustling trade center of Albany, New York. But low water and sandbars ultimately impeded steamboat navigation, and by the turn of the last century, this southwestern Georgia town had switched its cargo traffic from river to rail. Though years later such heavy-hitting companies as Proctor & Gamble, M & M/Mars, and Merck set up manufacturing centers in the small city (and still operate there), the river remained largely ignored, escaping the abuse suffered by so many other waterways. Then, in 1994, a disastrous 500-year flood, and in 1998, a torrential 100-year flood, surged into Albany, turning local attention back toward the Flint.

"Our future is riding on the river," reads the slogan for the downtown revitalization campaign that emerged in the wake of the great deluges. With ambitions to reroute streets and create parks, trails, housing, a conference center, a hotel, museums, historic sites, and more, the master planners felt they needed a "magnet or signature building to make Albany a destination," says Thomas Chatmon, Jr., president and C.E.O. of Albany Tomorrow, Inc. (ATI), the public-private enterprise overseeing this urban revival. "But what sort of building would be authentic and really about us? A place about the river itself," he concluded, envisioning a nature center focused on local aquatic ecosystems. With $15 million (later reaching $26.8 million) in state funds for the RiverQuarium's design and construction, ATI promised to create a center that would never draw on public funds for its operation and survival.

A search for an architect of international stature led to New Mexico–based Predock, who had previously designed nature centers, though not aquariums per se. "Antoine came to the initial interview with just a wealth of information about the hydrology, geology, ecology, archaeology, history, and especially the Native American culture of this area," recalls Chatmon. "It blew us away."



Predock promptly secured the commission and embarked on further explorations of the river and its surroundings, some of which led to the region's Kolomoki burial mounds and Blue Holes. Kolomoki mounds, the archaeological remains of local tribes, would inspire the building's external form, drawing on what the architect describes reverentially as "big, mute landforms rising from the ground."

Blue Holes, a natural phenomenon of southeastern Georgia and northern Florida, would also profoundly influence the concept of RiverQuarium that Predock and his collaborator, Boston-based exhibition designer Frank Zaremba, AIA, of Lyons/Zaremba, formulated. A Blue Hole develops when an underground limestone substrate collapses, allowing aquifers, or subterranean springs, to well up and fill the large cavity. At a constant temperature of 68 degrees Fahrenheit, typically cooler than the surrounding air, the collected water creates a microclimate for aquatic and plant life. Many aquifers lie beneath Albany, feeding its farm crops and manufacturing plants. But the visible aquifers, the Blue Holes, are what inspired the sacred Creek Indian idea of "skywater,"

**Project:** *Flint RiverQuarium, Albany, Georgia*
**Architect:** *Antoine Predock Architect—Antoine Predock, FAIA, design principal; Sam Sterling, AIA, executive senior associate; Geoffrey Beebe, AIA, senior associate; Stuart Blakely, associate*
**Exhibit design:** *Lyons/Zaremba*
**Architect of record:** *RBK Architects*

PHOTOGRAPHY: © TIMOTHY HURSLEY



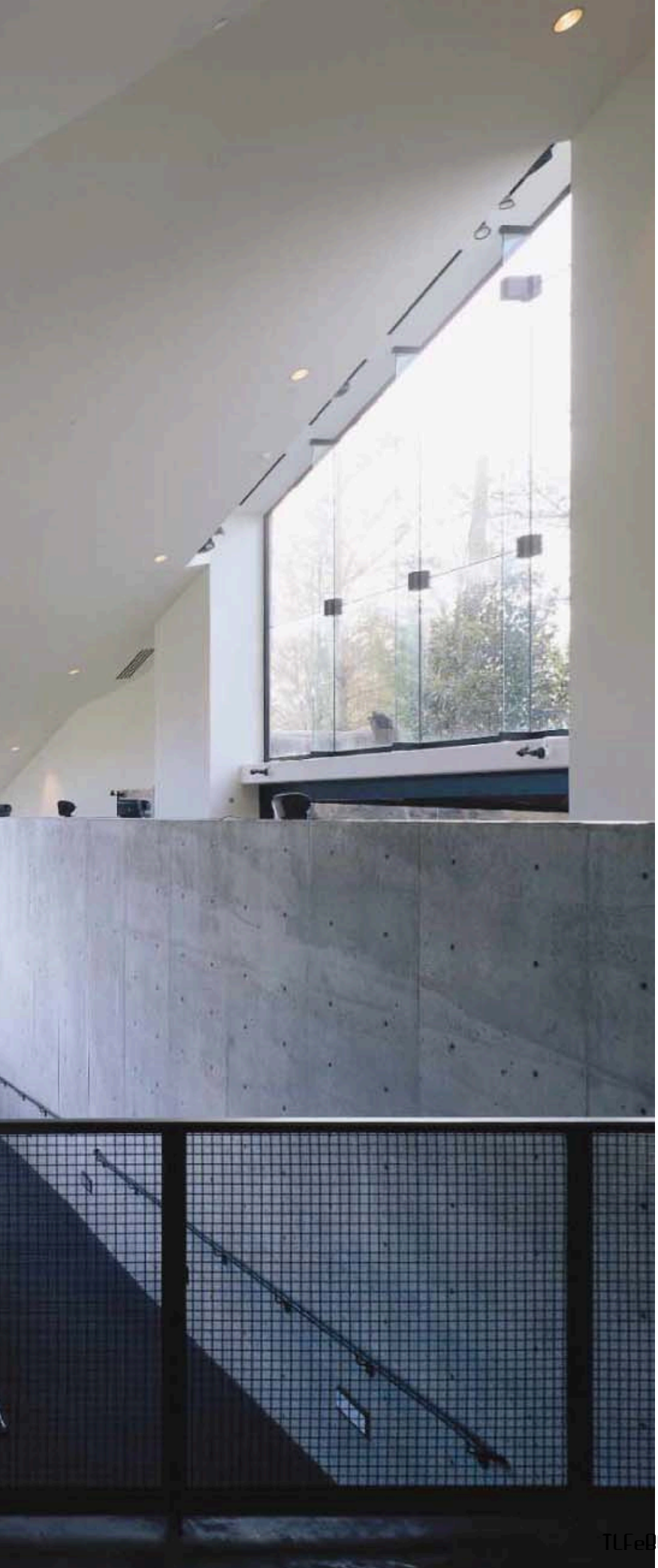


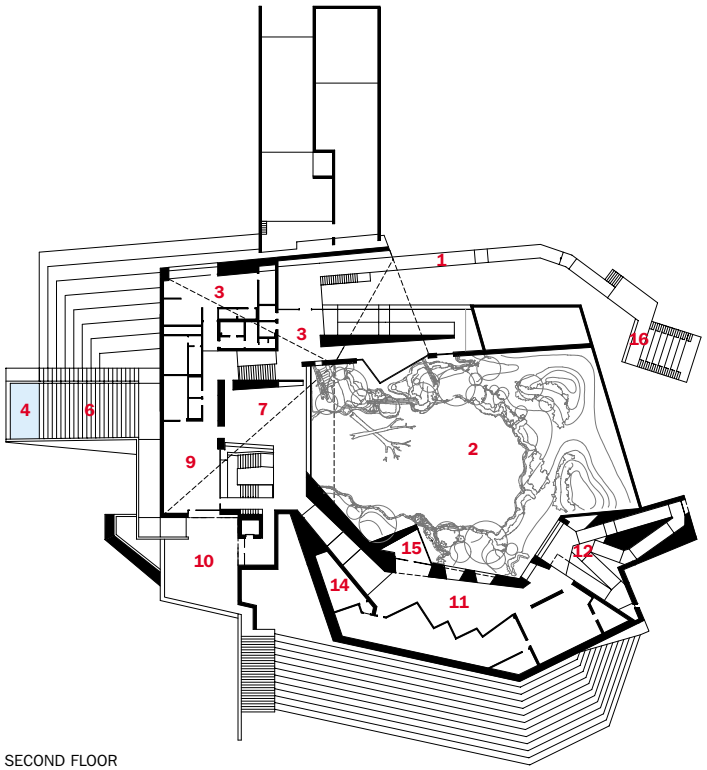
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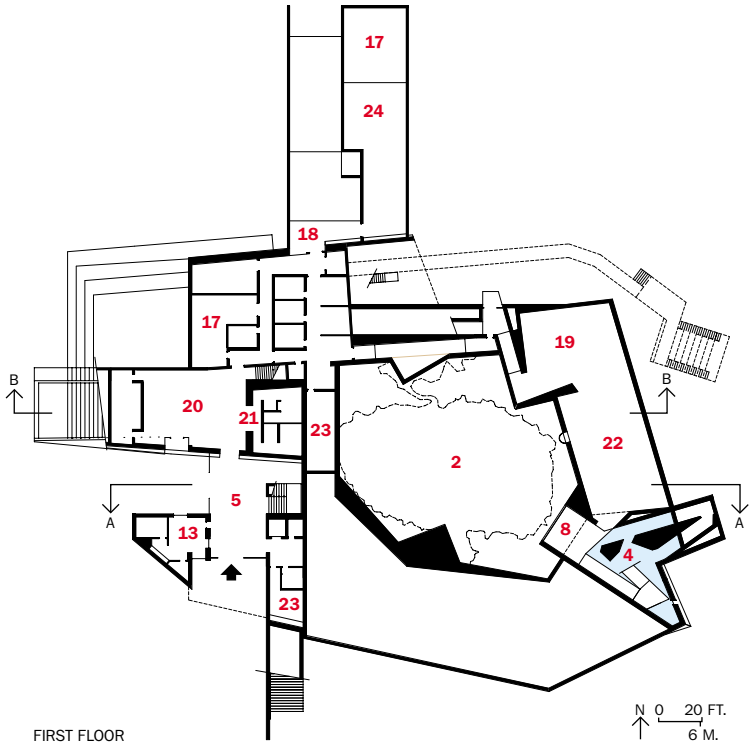
A curtain wall with structural glass fins instead of mullions permits unbroken views out from the Skywater room and stair (this page) to the Blue Hole and river beyond.

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SECOND FLOOR



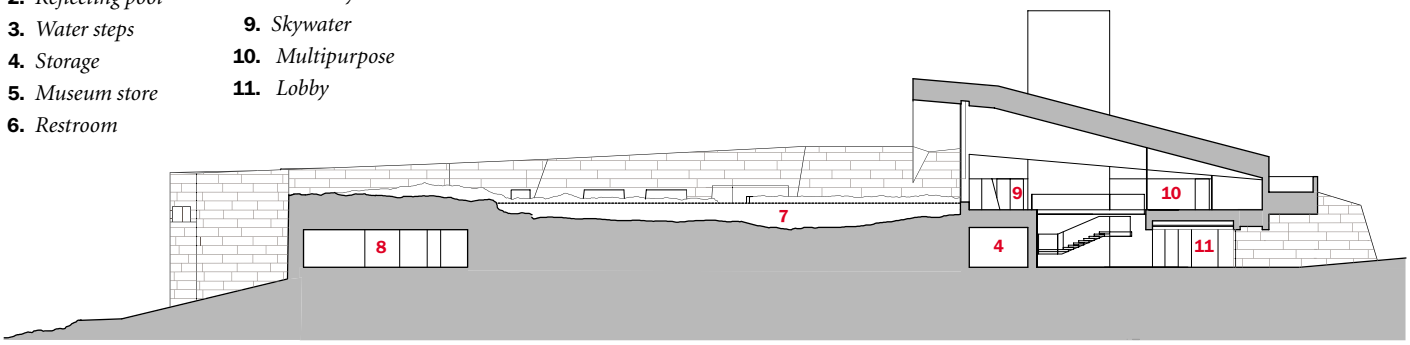

FIRST FLOOR

1. *Walkway to river*
2. *Blue Hole*
3. *Curatorial*
4. *Reflecting pool*
5. *Lobby*
6. *Water steps*
7. *Skywater*
8. *Blue Hole aperture*
9. *Multipurpose*
10. *Terrace*
11. *Flint River gallery*
12. *Blue Hole ramp*
13. *Ticketing*
14. *Audiovisual*
15. *View deck*
16. *Amphitheater*
17. *Mechanical*
18. *Loading dock*
19. *World of Water gallery*
20. *Museum store*
21. *Restrooms*
22. *Discovery caverns*
23. *Storage*
24. *Blue Hole life support*



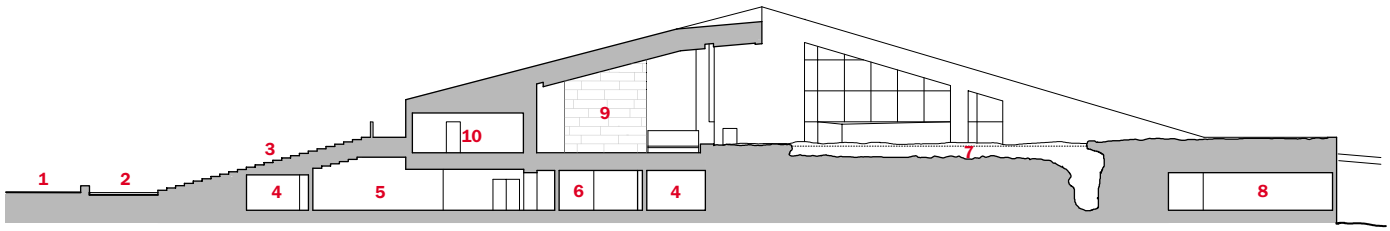
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1. *Plaza*
2. *Reflecting pool*
3. *Water steps*
4. *Storage*
5. *Museum store*
6. *Restroom*
7. *Blue Hole*
8. *Discovery caverns*
9. *Skywater*
10. *Multipurpose*
11. *Lobby*




SECTION A-A

0 10 FT.
3 M.




SECTION B-B





**Ramps and stairs threading through the RiverQuarium lend the journey sectional complexity, yielding views of the Blue Hole from various levels and vantage points, including underwater (near left) and above the pool (opposite and far left). Convincingly naturalistic, the man-made Blue Hole was planted with live vegetation that undergoes cycles of seasonal change.**

describing the natural pools that appear blue, as if capturing a piece of the sky. The concept captured Predock's imagination.

With no Blue Hole on his riverfront site and the threat of floods making it technically impractical to route the Flint through the building, the architect created a 12,000-square-foot artificial Blue Hole at the center of his structure—as if the RiverQuarium had risen around an untamed condition.

"To shield the inner experience of water [at the heart of the building], I thought of the exterior as an almost blank, yet mute and powerful, wrapper," says Predock. From outside, the structure's windowless triangulated forms rise toward its center, recalling an ancient burial mound. On one side, water flows over a run of stairs, creating a gently inclined waterfall. Outer walls of cast concrete and stepped ramparts of massive limestone blocks—rough, as if cut directly from the riverbed—enclose the structure, revealing just a hint of the Blue Hole: tall trees poking above the roofline.

At first glance, the RiverQuarium's massing, with its convergence of triangular volumes, bears a striking, almost déjà-vu resemblance to some of Predock's earlier public structures, including the Tang Museum in Saratoga, New York [RECORD, May 2001, page 224], and the Spencer Theater in Ruidoso, New Mexico [RECORD, May 1998, page 152]. The architect attributes any apparent similarities to his affinity with Mayan ruins and other mound cultures of North America—to his a fascination with "tilted planes as displaced land and a trajectory connecting earth and sky." But, he asserts, each of these buildings has a unique relationship to its site: Whereas the Tang provides horizontal vectors, drawing together disparate parts of a college campus, and the Spencer echoes the form of the mountains behind it, the RiverQuarium "hunkers down into the earth and gazes out toward the river."

Partially burrowed into the site, the 38,000-square-foot interior offers a strong sectional experience of descent, a journey that actually begins with an ascent to the chapel-like Skywater room. Completely free of interior exhibits, this generous space focuses visitors' attention outdoors on the reflective surface of the Blue Hole (filled with 175,000 gallons of water) with its live vegetation that changes seasonally, and the river beyond it. The building, an irregular U, embraces its Blue Hole, which lies open to the sky. The eye takes in the man-made body of water and the larger natu-



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ral one as a continuum. A structural-glass curtain wall—with clear glass fins rather than mullions—allows for uninterrupted views.

After seeing the Blue Hole from above, visitors continue down the interior's main path, a circle with ramps descending below the water level. Here, through glazing, the water appears as a lens to the sky, visually merging aquatic and heavenly realms. The underwater habitat reveals an array of fish, plant life, amphibians, insects, and reptiles (including alligators). "Instead of making a box with aquarium windows," says Predock of his work with Zarimba, "we wanted to engage the public spatially with the exhibit." The passage through the dimly lit interior leads through a cavern and fish hatchery (with some exhibits achieving more spatial, interactive, and experiential qualities than others). Finally, the circle ascends back to Skywater.

The exhibits are already a big hit with children, many of whom press their faces against the glass. From the building's exterior, the waterfall, steps, and ramping planes—all evoking a landform—also invite their participation (but the museum administrators, perhaps fearful of liability, have sprinkled the structure's perimeter with "No Climbing" and "Keep Off" signs). Parents and teachers appear, pulling back toddlers as they gleefully reach for the water. The temptation would have been even greater if value engineering had not eliminated the canted water wall (beside the water stair) and sod roof (or field in the sky) that the architect had originally planned. But surely enough remains of the overall intent to excite young visitors.

As the town continues to realize its master plan—including a park honoring Albany native Ray Charles—the RiverQuarium evolves as a work in progress. Its adjacent aviary and riverview amphitheater, both outdoors and designed by Predock, are yet to come. Rooted in a private endowment now exceeding $4 million, the Blue Hole already grows thick with vegetation that evolves with the seasons—all set to bloom in vivid color each spring. ■

**Sources**

**Structural glass curtain wall:** *Innovative Structural Glass*

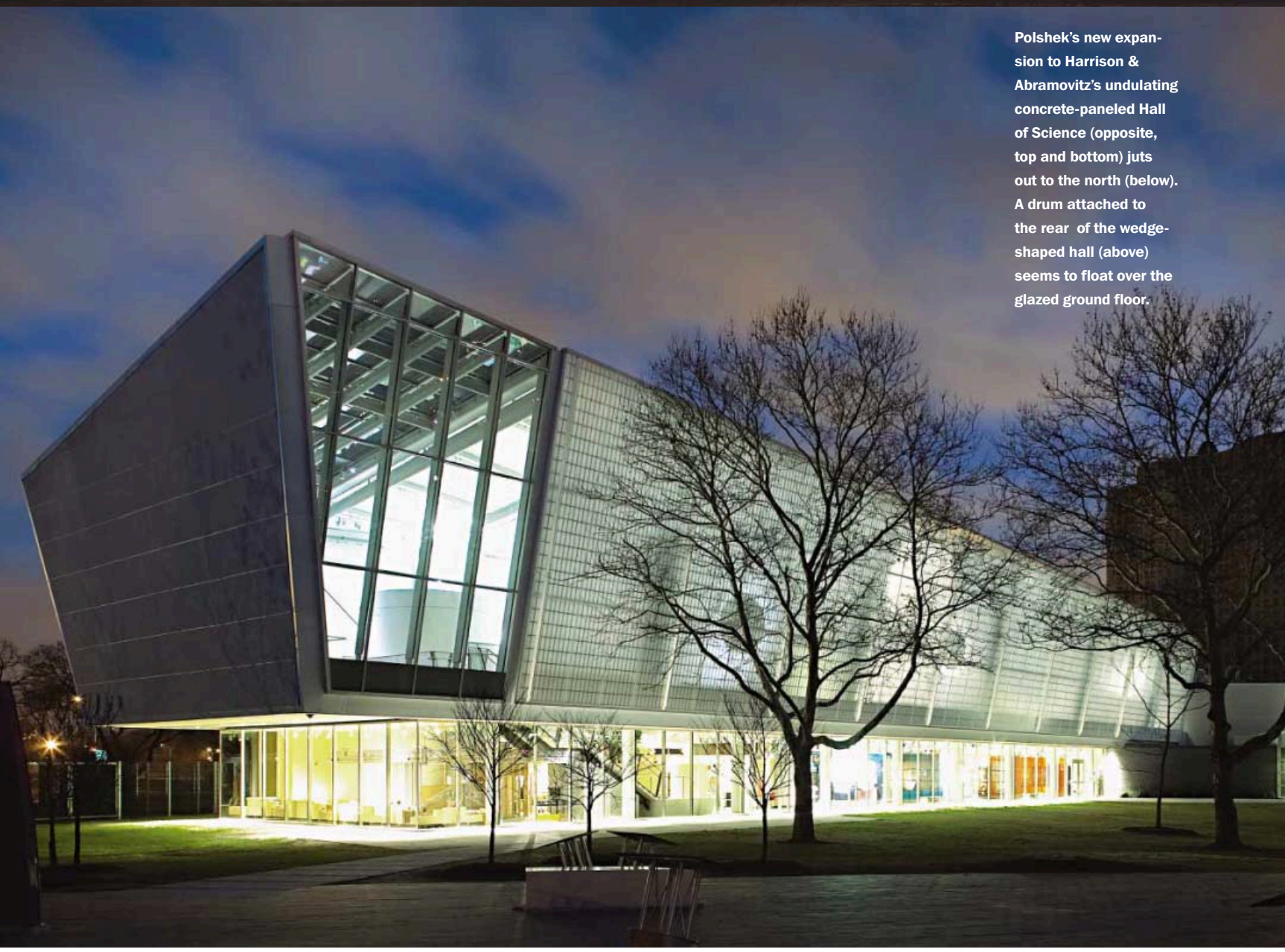
**Water steps:** *Hall Fountains*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



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Polshek's new expansion to Harrison & Abramovitz's undulating concrete-paneled Hall of Science (opposite, top and bottom) juts out to the north (below). A drum attached to the rear of the wedge-shaped hall (above) seems to float over the glazed ground floor.



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# **Polshek Partnership's** expansion brings vitality and new life to the **HALL OF SCIENCE**, in a 1964 World's Fair building, in Queens, New York



**By Suzanne Stephens**





It's not easy to make something exciting out of leftovers. Especially unappetizing are some of the architectural remains from the New York 1964 World's Fair in Flushing Meadows-Corona Park, Queens. The few buildings that were constructed on a permanent basis have been moldering for the past 40 years, as if waiting for Disney. Now at least the Hall of Science, designed by Wallace Harrison of Harrison & Abramovitz, has been turned into architectural haute cuisine with a spirited expansion by Polshek Partnership.

Although Wallace Harrison had famously designed the futuristic Trylon and Perisphere for the 1939 World's Fair on the same site, his 1964 structure received negligible attention. The problem may have been due to the lack of critical acclaim for the World's Fair in general: Under the leadership of the indomitable planner, Robert Moses (nicknamed "Fair Fuhrer"), the 1964 exposition lacked the innovative aura of its predecessor. Yet the Hall of Science—structurally and spatially—was unique, owing to its 80-foot-high undulating wall of tan poured-in-place concrete coffers. Moreover, the 5,400 coffers are filled with hand-faceted shards of cobalt blue glass held in a concrete matrix. The interior of the free-formed cellular concrete space of the Great Hall, as it is called, glows eerily, much like a cathedral designed by August Perret. This serpentine tower, now used for temporary video exhibitions, rises from a hexagonal base where permanent science exhibits are displayed within the articulated, muscular spaces of the exposed poured-in-place-concrete structure.

In its quest to bring the Hall of Science into the 21st century, New York City's Department of Design and Construction, working with Hall of Science director Alan Friedman, hired Polshek Partnership to expand its display, service, and administrative spaces for $55 million. Just a few years back, in 1996, Beyer Blinder Belle had already added a main entrance rotunda and an egg-shaped auditorium to the original structure.

The approach that Polshek's design partner Todd Schliemann adopted was to play up the opposing characteristics of the Great Hall and what Polshek dubbed its "Hall of Light." Whereas Harrison's vertical, undulating, opaque concrete wall looms sinuously over the immediate skyline, Polshek's 55,000-square-foot expansion features an angular wing shooting out horizontally some 55 feet to the north. While the walls of the Great Hall are dense and dark, with blue translucent panes, the Polshek wing, a wedge wrapped in lightweight translucent fiberglass panels, is perched atop a clear, glazed base. The Harrison structure, opaque from without, glows mysteriously inside during the day; Polshek's interior, brazenly light by day, glows phosphorescently at night. Harrison's space is abstract and scaleless; the Polshek wing, with its complement of variously sized Modernist elements, imparts a sense of human scale. As if deferring to the circular forms of Beyer Blinder Belle's entry portion, Polshek designed a two-story, stuccoed-wallboard drum to the rear of its complex. Housing temporary exhibitions, this windowless gallery rests on a clear glass base reserved for offices.

Since the Hall of Science is geared primarily to school children and families, Friedman wanted to make sure that the building would not overwhelm its visitors. He had seen Polshek's acclaimed Rose Planetarium at the American Museum of Natural History in New York but didn't want such a grand, awe-inspiring space in his Queens science center: Harrison's Great Hall, which is used for temporary exhibitions, did that. The new addition should show that "science was not strange and fearful." But, he notes, "The building should be exciting, technologically innovative, and draw us into it."

**Project:** *Hall of Science, Queens, N.Y.*
**Architect:** *Polshek Partnership—Todd H. Schliemann, design partner; Joseph L.Fleischer, management partner; Don Weinreich, project manager; V. Guy Maxwell, project architect*
**Owner:** *N.Y.C. Department of Design and Construction; Department of Cultural Affairs; New York Hall of Science*
**Engineers:** *Leslie E. Robertson Associates (structural); Flack + Kurtz (m/e/p, fire, security); El Taller Colaborativo (civil); Langan Engineering and Environmental Services (geotechnical, environmental)*

PHOTOGRAPHY: © JEFF GOLDBERG/ESTO



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**Curvilinear stairs with perforated-steel balustrades encourage the visual and physical link between old and new spaces. Visitors approach the stair and mezzanine (left) from the old core, now called the Central Pavilion. The lower floor of the Central Pavilion is linked to this area via a new steel-and-concrete spiral stair (below).**

Stitching together Harrison's bold base and tower with Beyer Blinder Belle's circumspect entry piece and Polshek's energetic expansion was not easy. The Polshek-designed lobby stretches from the Beyer Blinder Belle rotunda to the new gallery, allowing visitors several routes of entry: via the rotunda and the old, windowless hexagonal exhibition space underneath the Great Hall, or straight on to the Polshek wing. For those entering the wing through the hexagonal space, Polshek inserted a steel-and-concrete spiral stair that connects this subterranean area to a new mezzanine from which the visitors are drawn by another arcing stair up to the main gallery on the second floor. As Schliemann explains, "We want to choreograph the movement upward and outward, from dark to light."

The structure of the new wedge-shaped hall "explores the morphology of force and form," says Schliemann, referring to the compressive and tensile forces of the 11 trusses that dominate the hall's basic armature. The king-post trusses follow a staggered formation to create a ridgeline running diagonally from the southeast corner of the roof to the northwest one at the hall's far end. The steel skeletal structure of beams, vertical posts, and steel tension cables creates an animated space: The walls, with flared steel columns tilted at an obtuse angle to the floor and diagonal steel cables to keep the structure from racking, further bolster the dynamism of the whole. Wrapping the roof and walls of this frame is a light, translucent, fiberglass skin. The cells of the Kalwall system, with insulation between the membranous sheets, rely on an internal aluminum grid for stiffness. In turn, they form panels about 5 feet wide and about 11 feet high, which are attached to battens to create the building envelope. "We have taken a material that is typically used as infill and turned it into a skin wrapping the walls and the roof," says Guy Maxwell, the project architect.

Within this vigorously engineered space, visitors, usually of school age, interact with the various science exhibits and often receive extemporaneous instruction from student volunteers. At the far end of the gallery, a sitting area under a large glass installation by James Carpenter leads to another stair and the first level of exhibits, plus the Science Access Center, or library.



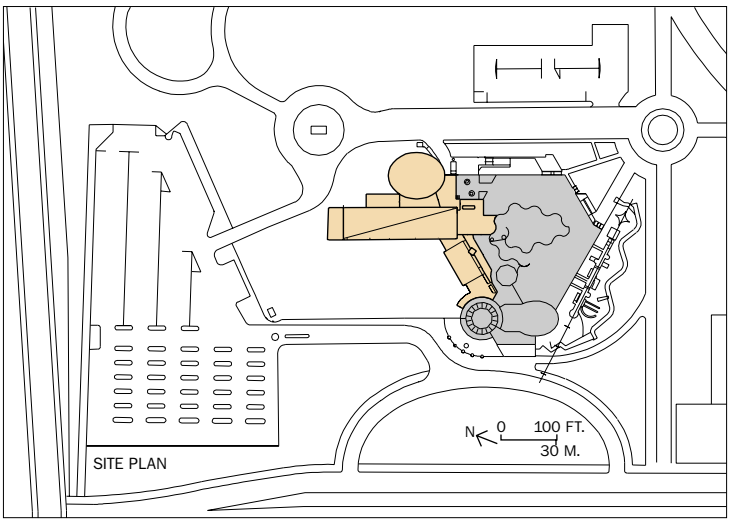


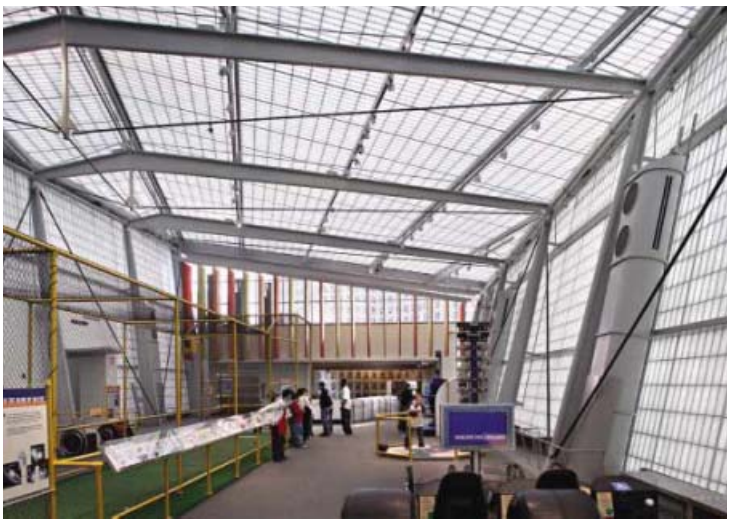
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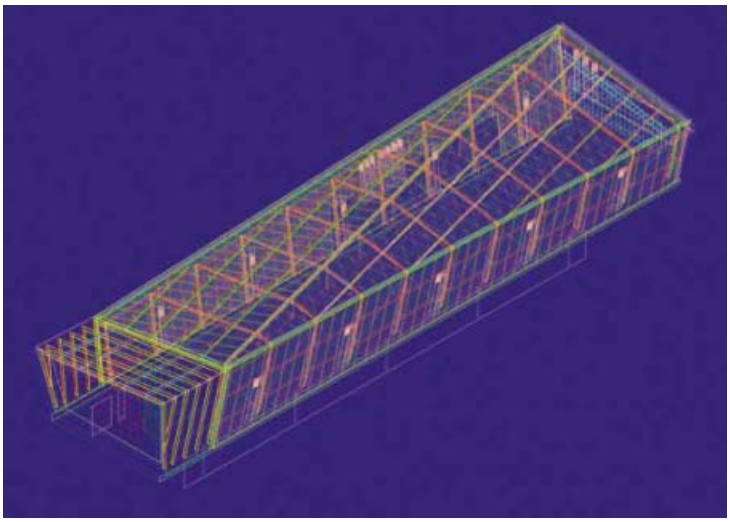



From the ground floor of the new wing, visitors can take the stair to Harrison's Great Hall or proceed straight ahead to the mezzanine overlooking the permanent gallery underneath.

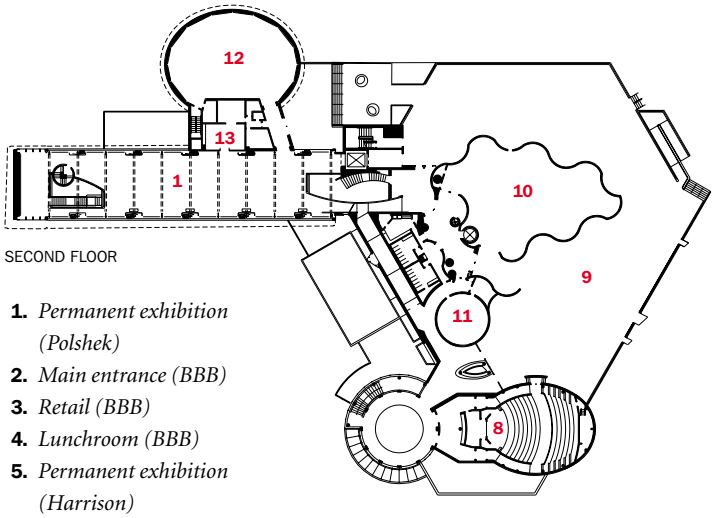
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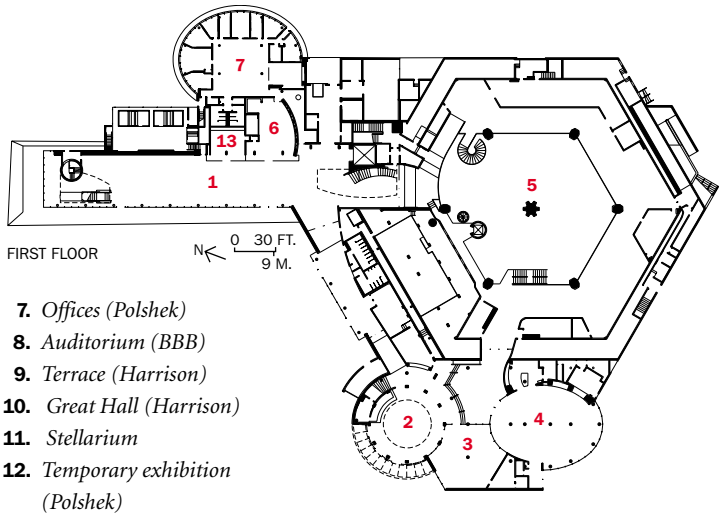





**The upper level of the new wing (top right) features a series of staggered king-post trusses designed with a diagonal ridgeline that moves from one corner of the wedge to the opposite corner at the far end (diagram, right).**




1. *Permanent exhibition (Polshek)*
2. *Main entrance (BBB)*
3. *Retail (BBB)*
4. *Lunchroom (BBB)*
5. *Permanent exhibition (Harrison)*
6. *Science Access Center (Polshek)*




7. *Offices (Polshek)*
8. *Auditorium (BBB)*
9. *Terrace (Harrison)*
10. *Great Hall (Harrison)*
11. *Stellarium*
12. *Temporary exhibition (Polshek)*
13. *Discovery Lab (Polshek)*

Judging from the extraordinary response of the young audience, the open laboratory concept seems to communicate the accessibility of science amazingly well. Friedman notes that he particularly likes the visual connections the architects established from space to space and level to level. The knitting of the old and the new sections of the science center appears to function smoothly, although the circulation path established in entering the building through the Beyer Blinder Belle portion now seems a bit circuitous. This brings up another problem: While the Polshek contribution succeeds especially well as an expressive architectural statement about how to add onto the Harrison building, Beyer Blinder Belle's architecture doesn't quite fit into the new mix. Its presence remains troubling, whereas the imaginative balance of opposites between Harrison's and Polshek's efforts—both based on walls of "cells": one organic, concrete, and dense; the other, angular, translucent, and lightweight—maintains a spirited architectural dialogue. The Polshek Partnership has taken the leftovers from Harrison's almost-forgotten scheme for the World's Fair and infused them with an élan that allows the identities of both to remain intact, even if the entire ensemble doesn't quite hang together. ■

**Sources**

**Fiberglass sandwich panels for wall and roof:** *Kallwall*
**Curtain-wall and storefront systems:** *EFCO Corporation*
**Glass:** *Viracon*
**Roofing:** *Johns Mansville*
**Metal ceilings:** *Hunter Douglas*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



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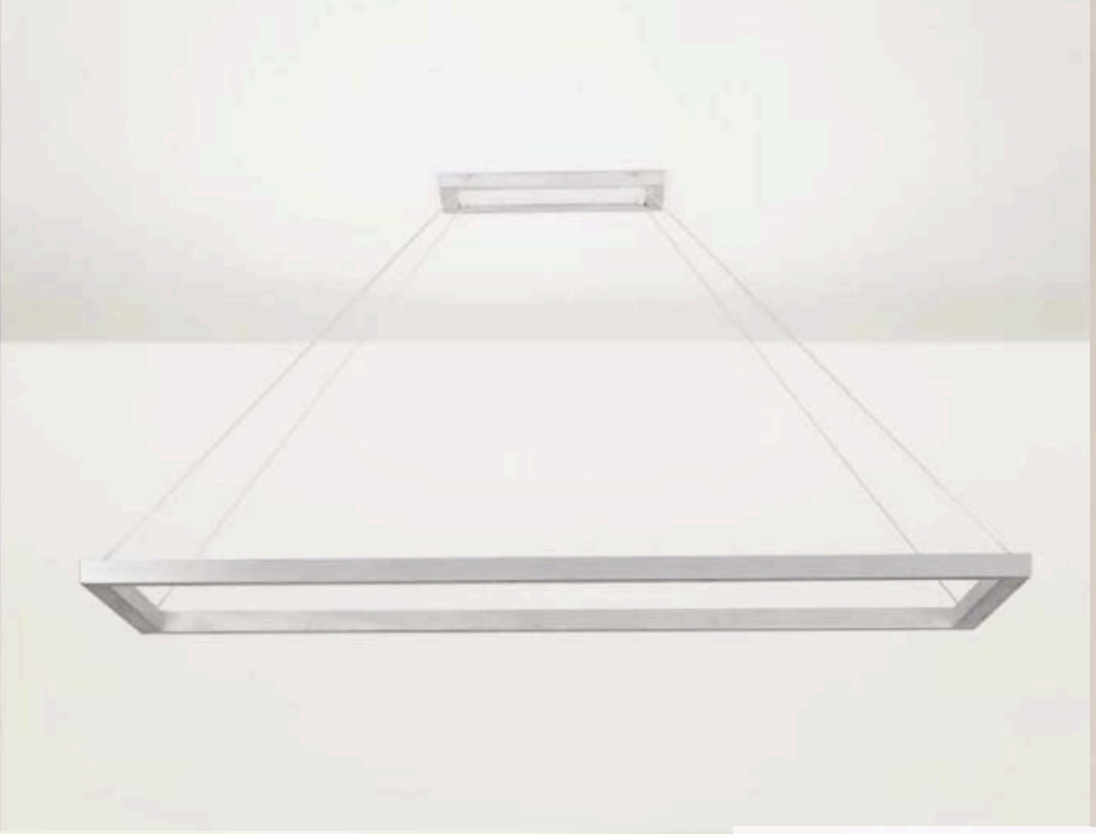
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Location: Dallas, Texas
Architect: Good, Fulton, & Farrell Architects

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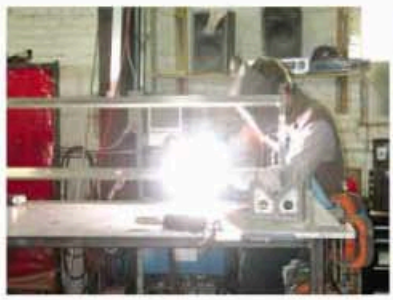
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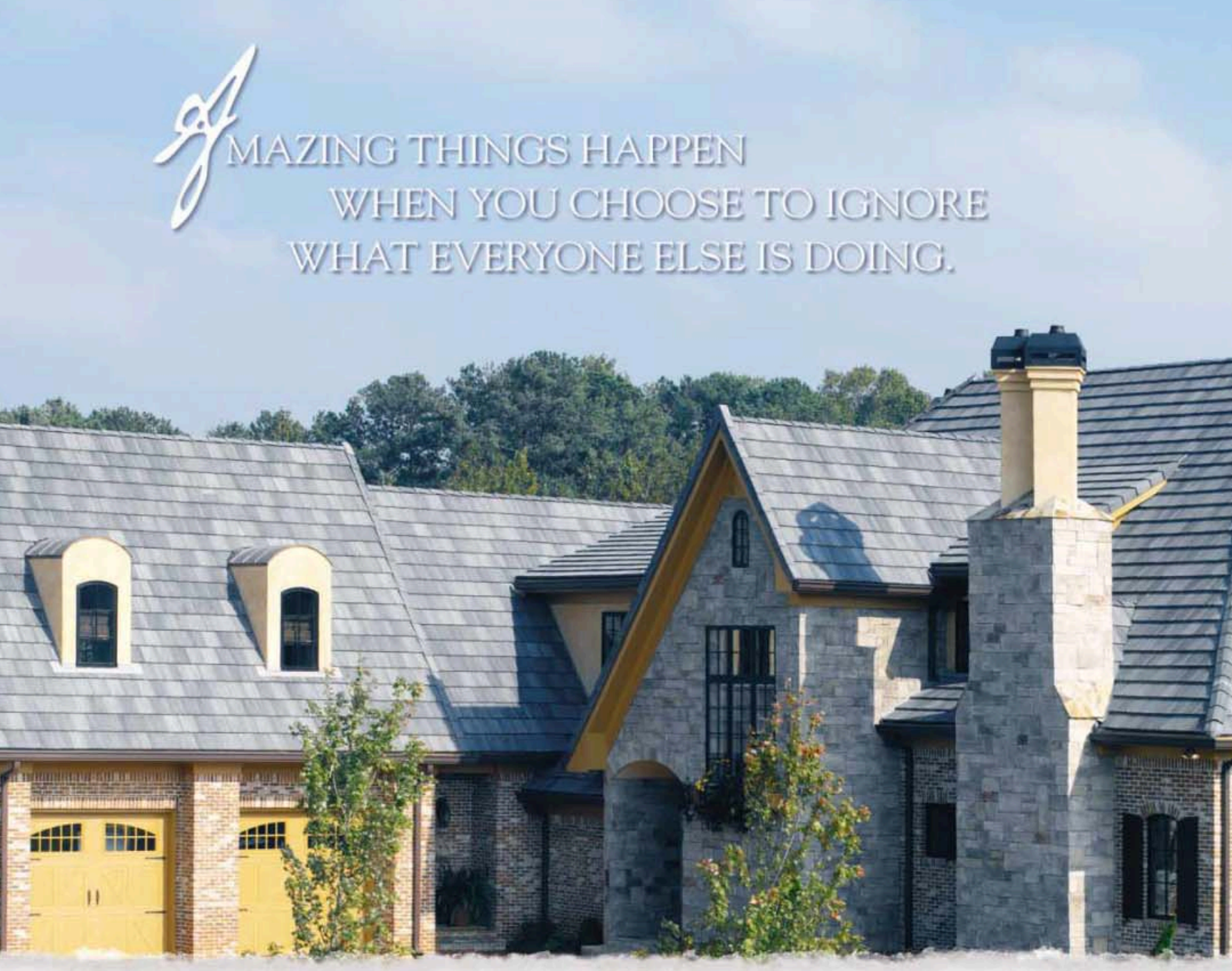






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Sacred Spaces

# Divine Intervention

**AT A TIME WHEN POLITICIANS ARE DEBATING THE ROLE OF FAITH AND RELIGION IN PUBLIC LIFE, ARCHITECTS ARE CREATING SPACES THAT SPEAK WITH A UNIVERSAL SPIRIT.**

**By Clifford A. Pearson**

What makes a place sacred? Iconography offers one solution: Affix a cross or a Star of David to a building and it becomes a church or a synagogue. Devotion provides another: Lay down a prayer rug, face Mecca, and even a sidewalk can be transformed into a place of worship. But architecture can go beyond the ad hoc to create more permanent responses to the challenge of imbuing buildings with a spiritual dimension. Time seems to be a critical element in both the architectural program and the many schemes that have been proposed and built since people began praying. Indeed, the intersection of the timelessness of faith and the transitory nature of our lives on Earth provides the emotional tension that drives the best examples of religious architecture.

Making the metaphysical visible or physical is the key task facing architects designing religious buildings. Although materials and methods have changed greatly from one period and civilization to another, architects have had only two basic strategies at their disposal: defiance and allusion. A giant stone pyramid designed to last forever (or as close as possible) is an example of the first, while a stained-glass window that colors light as it enters a cathedral is an example of the latter. Some religious buildings combine both approaches; just think of Le Corbusier's chapel at Ronchamp with its impressive, thick walls and the ephemeral, ever-changing light that animates the spaces within. At Ise in Japan, Shintoism alludes to temporality by requiring that the main shrine be rebuilt every 20 years. In this way, architecture becomes ritual, which can remain timeless as long as it is practiced.

The projects included in this month's Building Types Study exhibit a range of approaches to making the physical spiritual. At the Bigelow Chapel in Minnesota, Hammel, Green and Abrahamson orchestrated a quiet symphony of light that floods the sanctuary. At the Holy Rosary Catholic Church in St. Amant, Louisiana, Trahan Architects skillfully manipulated the relationship between solid and void to allude to the essential mystery of faith. In the vacation town of Seaside, Florida, Merrill and Pastor used vernacular forms, but stripped them of all explicit iconography to create a sacred space for people of all beliefs. At a resort in Japan, Klein-Dytham Architecture treated one half of a wedding chapel's shell as a perforated metal veil, then set it in motion to add an element of drama and a bit of fun to a formal occasion.

All the projects, though, take a restrained approach to form and space, understanding that simple is often more powerful than complex when it comes to expressing what is sacred. ■



**1.**

**New Brighton, Minnesota**

*Hammel, Green and Abrahamson inserted a glass-and-stone chapel into a seminary campus so that it both inspires and fits in.*



**2.**

**Kobuchizawa, Japan**

*At a Japanese resort, a wedding chapel by Klein-Dytham Architecture explores the area where popular culture meets religion.*



**3.**

**St. Amant, Louisiana**

*Trahan Architects turned poured concrete into an austere but sensual material at a small complex of religious and education buildings.*



**4.**

**Seaside, Florida**

*Using vernacular building systems and simple materials, Merrill and Pastor created a civic landmark where people of all faiths can pray.*

For more information on these projects, go to Projects at www.architecturalrecord.com.

PHOTOGRAPHY: © PAUL WARCHOL (1); KATSUHISA KIDA (2); TIMOTHY HURSLEY (3); STEVEN BROOKE (4)



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# Bigelow Chapel
## New Brighton, Minnesota

**HAMMEL, GREEN AND ABRAHAMSON MODULATE SCALE AND LIGHT TO CREATE A GLOWING CHAPEL ON THE CAMPUS OF A MIDWESTERN SEMINARY.**

**By Camille LeFevre**

**Architect and engineer:** *Hammel, Green and Abrahamson—Gary Reetz, AIA, principal in charge; Joan Soranno, AIA, design principal; John Cook, AIA, project architect; Tony Staeger, structural engineer; Lance Kempf, mechanical engineer; Terry Tangedahl, electrical engineer; Steven Dwyer, design team*
**Client:** *United Theological Seminary*
**Consultants:** *Coen + Partners (landscaping); Schuler Shook (lighting); Kirkegaard Associates (acoustical)*
**General contractor:** *M.A. Mortenson Company*

**Size:** *5,300 square feet*
**Cost:** *Withheld*

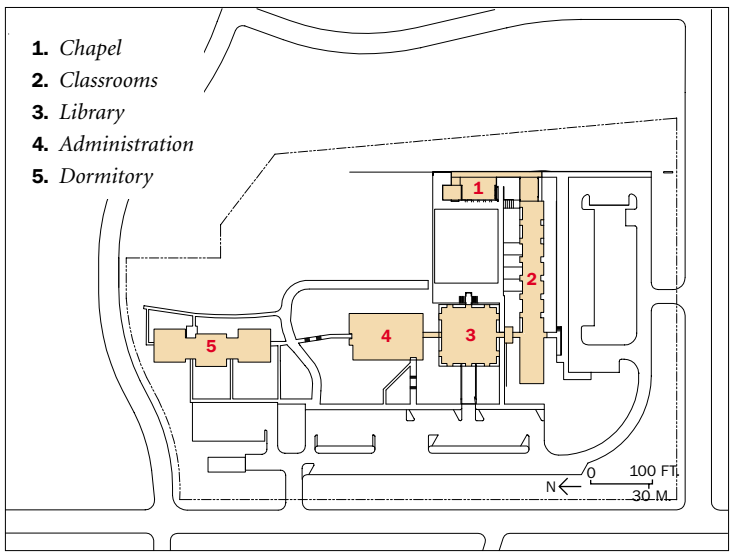
**Sources**
**Precast concrete:** *Artstone*
**Stainless-steel curtain wall and skylights:** *Mero Structures*
**Aluminum windows and doors:** *HKL Cladding Systems*
**Millwork and liturgical furniture:** *Wilkie Sanderson*
**Chapel chairs:** *ICF Group*
**Ambient lighting:** *Uovo; Fontana Arte*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

Respecting the subdued context while adding an inspiring place of worship was the challenge facing the architects of the Bigelow Chapel at the United Theological Seminary of the Twin Cities in New Brighton, Minnesota. For 44 years, the seminary—a Christian-based, ecumenical graduate and professional school whose 225 students come from a variety of faiths—had occupied simple, Modern buildings made of buff-colored brick and precast concrete. In the spirit of Midwestern frugality, a multipurpose room served as the seminary's chapel. But when a former student and board member donated $1 million for a chapel, the school took advantage of the opportunity to add a new kind of experience, not just more space. "We wanted the building to suggest a spiritual invitation to worship," says Wilson Yates, president of the seminary. "It really had to do with the creation of sacred space."

To create a sacred space that didn't overwhelm its quiet, 11-acre-campus setting, Joan Soranno, AIA, a design principal at Hammel, Green and Abrahamson (HGA), manipulated scale and light. "In traditional religious spaces like synagogues, Gothic cathedrals, and mosques, the scale is monumental, with the darkness generating intimacy,"

*Camille LeFevre writes about architecture for publications such as* Metropolis *and* Architecture Minnesota.




explains Soranno. Bigelow Chapel, which she designed with her HGA colleagues John Cook, AIA, and Steven Dwyer, is the inverse. "Here, we made the scale smaller but flooded the sanctuary with light."

### Program

The seminary requested a building with a flexible sanctuary able to accommodate seating in a variety of configurations, along with a narthex (vestibule) and offices. The new chapel needed to connect to an existing classroom building and architecturally address a library across the lawn to the west, two modest structures erected in 1962.

The real challenge set forth by the seminary, however, was a spiritual one. The sanctuary, as the focus of the building, had to be accessible—iconographically and aesthetically—to the seminary's multidenominational community. "We wanted a chapel that would convey the transcendence, mystery, and power of God," says Yates.

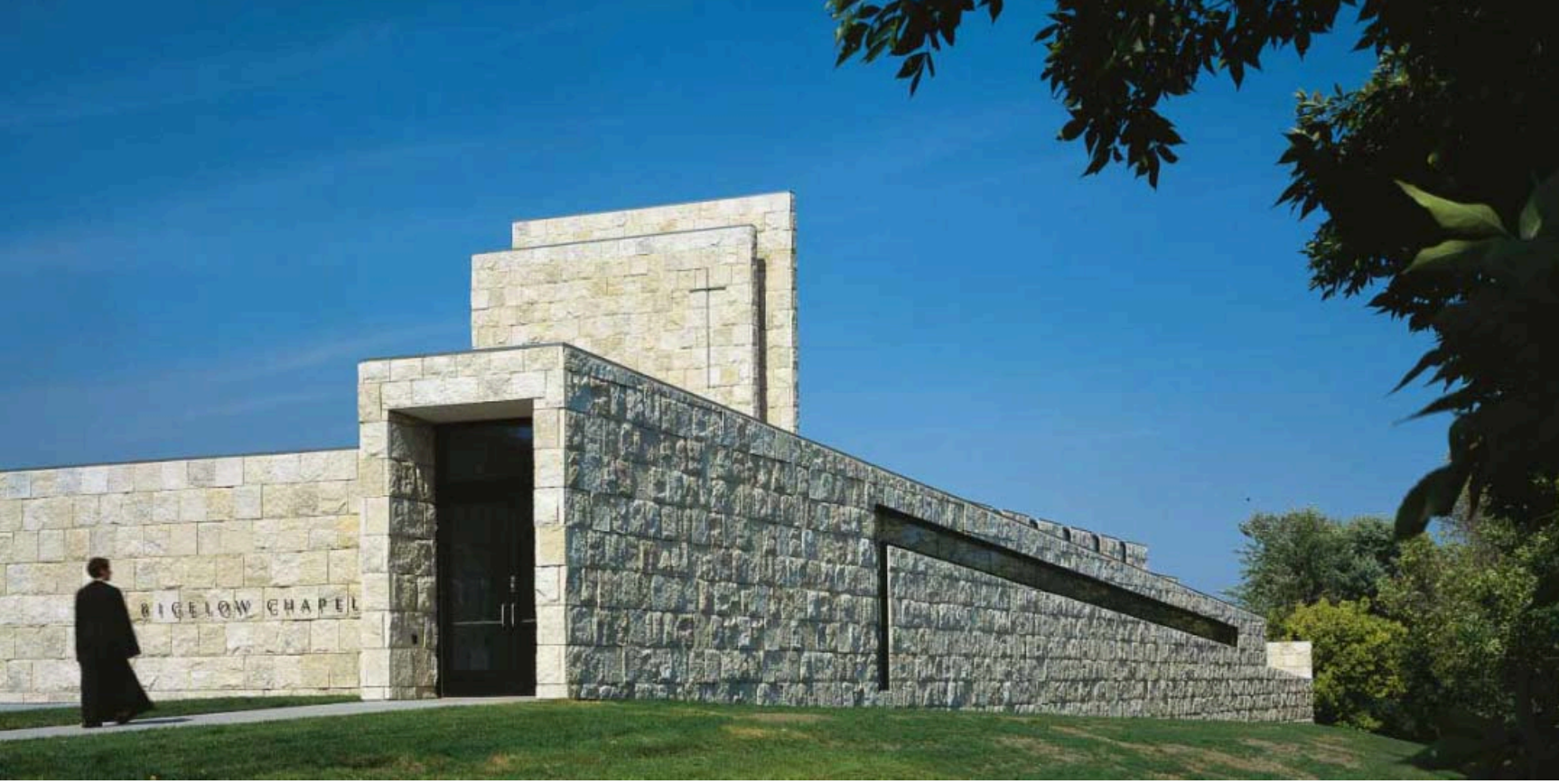
### Solution

Rather than thinking in terms of a Christian worship space, says Soranno, she began designing a 2,200-square-foot sanctuary by considering "what makes a place spiritual." She arrived at a trinity of qualities: intimacy, warmth, and light. She and her team conveyed the first two characteristics through six translucent, quilted-maple panels that ripple up and down the interior of the sanctuary's west-facing, glass-and-stainless-steel curtain wall. Maple floors and rectangular

PHOTOGRAPHY: © PAUL WARCHOL



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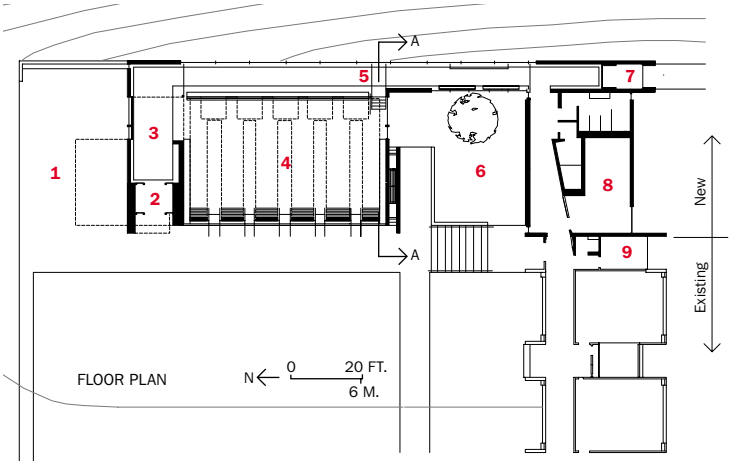





**A processional hall that runs the length of the building provides a main entry on the south end of the site (above). The sanctuary looks onto the west garden (left) and toward the existing library.**

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1. *North garden*
2. *West entry*
3. *Narthex*
4. *Sanctuary*
5. *Processional hall*
6. *Meditation garden*
7. *South entry*
8. *Mechanical*
9. *Office*

**The architects used stones from a quarry in Italy as prototypes for casting concrete panels used on the south end (above) and north side (right) of the building. A cantilevered roof seems to float above the narthex and the north garden, one of three outdoor spaces that tie the building to its site.**



quilted-maple panels that extend into the sanctuary from the ceiling of a long processional hall on the east side of the building reinforce the sense of peaceful enclosure.

"The maple has to do with the sense of warmth," Soranno explains, "while the curving panels create an intimate, nurturing environment in which to worship and pray." As sunlight passes from the curtain wall through translucent, acrylic-encased panels, it blends with and enriches the interior light. Daylight also enters the sanctuary through clerestory windows along the east wall and skylights, "which were critical," Soranno says. "For many people, that notion of light coming in from above evokes a sense of divine presence."

But because many people also "think of God as being manifested most beautifully in nature," Soranno created two windows in the sanctuary that frame landscaped views. The south one overlooks a meditation garden and its lone musclewood tree, while the north one borders a single white oak.

The architects kept the sanctuary column-free by using tapered beams secured through innovative moment connections to roof girders that transfer the bulk of the gravity load to the east wall, rather than the curtain wall on the west. Tiny stainless-steel mullions in the curtain wall act as invisible "columns."

Glass fins on the curtain wall project both inside and out, screening and diffusing light entering the sanctuary. Similar to buttresses that march through a Gothic cathedral, the fins and the curved maple panels create a rhythmic pattern with a meditative quality, says Soranno. The fins also introduce a planar quality of weightlessness that is repeated in several other "floating" forms, such as a stone-trimmed roof that hovers above and beyond the narthex on the west side of the building. This roof appears to be a 29-foot-long cantilever, but it is actually supported near its center by slender stainless-steel pipe posts secured to a lower roof.

A 42-foot-high bell tower at the south end of the sanctuary provides a strong vertical note to a building whose forms are predominantly horizontal. Two stone walls placed 2 feet apart and slightly offset from one another define the tower and echo the rhythm of the paired glass fins that run along the length of the sanctuary's curtain wall.

Initially, Soranno considered



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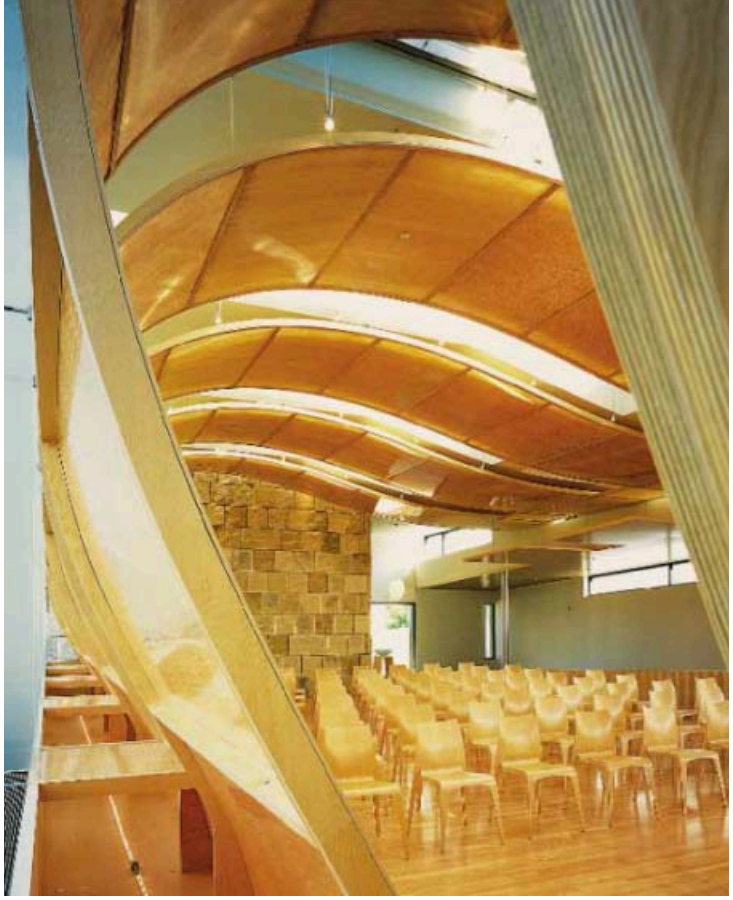
The meditation garden, between the chapel and the existing classroom building, is paved with black slate and a solitary musclewood tree.

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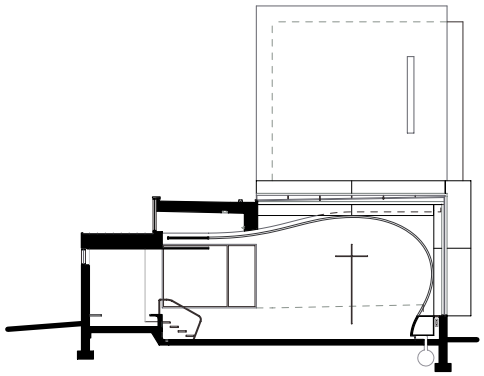


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**Quilted-maple ribbons wrap around the inside of the sanctuary (above and left), modulating light and adding a dynamic quality to the space. Soranno designed the maple table, lectern, pulpit, and baptismal font, while the maple chairs were bought.**



SECTION A-A

using Italian travertine for the bell tower and the north and south walls of the sanctuary. Instead, the design team ordered 50 pieces of the stone from an Italian quarry and kept 39 to use in the cladding and as prototypes for manufacturing 4,000 precast-concrete panels that look like stone.

To visually secure the 5,300-square-foot building to its site, the architects placed it 4 feet lower than the classroom building it connects to on the south and the library it faces on the west. A trio of gardens serve as transitional spaces between the chapel and its neighbors: a meditation garden adjacent to the classroom building, a small outdoor room on the north, and a lawn extending to the library.

A long stone-clad processional hall extends the entire building length, starting at the south entrance, running along one side of the meditation garden, and ending at the narthex on the north end of the site. Sloping toward the sanctuary, the hall serves as a stately but dynamic axis to the entire architectural composition.

### Commentary

Using daylight, space, and a sophisticated palette of materials, the architectural team rose to the challenge of creating a building that is spiritual, timeless, and welcoming to people of all faiths. ■



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# Leaf Chapel
## Kobuchizawa, Japan

**2** **KLEIN-DYTHAM ARCHITECTURE SETS A WALL OF A WEDDING CHAPEL IN MOTION AT A RESORT IN THE JAPANESE ALPS.**

**By Clifford A. Pearson**

**Architect:** *Klein-Dytham Architecture—Astrid Klein, Mark Dytham, Yoshinori Nishimura, Yukinari Hisayama, project team*
**Executive architect:** *Hoshino Resort Architects—Shozo Miyawaki*
**Client:** *Risonare Resort*
**Landscape designer:** *Studio On Site—Hiroki Hasegawa, Chisa Toda, Kazutaka Tanbe*
**Lighting designer:** *Ice—Masanobu Takeishi, Michiru Tanaka*
**Engineers:** *Arup Japan—Tatsuo Kiuchi, Yuji Kusawake, Keiko Katsumoto (structural); Tetens Engineering—Yutaka Murase, Ryoichi Teshigawara (mechanical, electrical)*
**General contractor:** *Rinkai Nissan Kensetsu—Hiroki Kanno, Fumihiko Kobayashi, Chiaki Kobayashi*

**Size:** *550 square feet*
**Cost:** *Withheld*

**Sources**
**Hydraulic rams:** *Kawasaki Heavy Industries*
**Glass-roof film:** *Lintec*
**Polycarbonate lens cap:** *Kyoraku*
**Fabric scrim:** *Taiyo Kogyo*
**Furniture:** *Waazwiz*

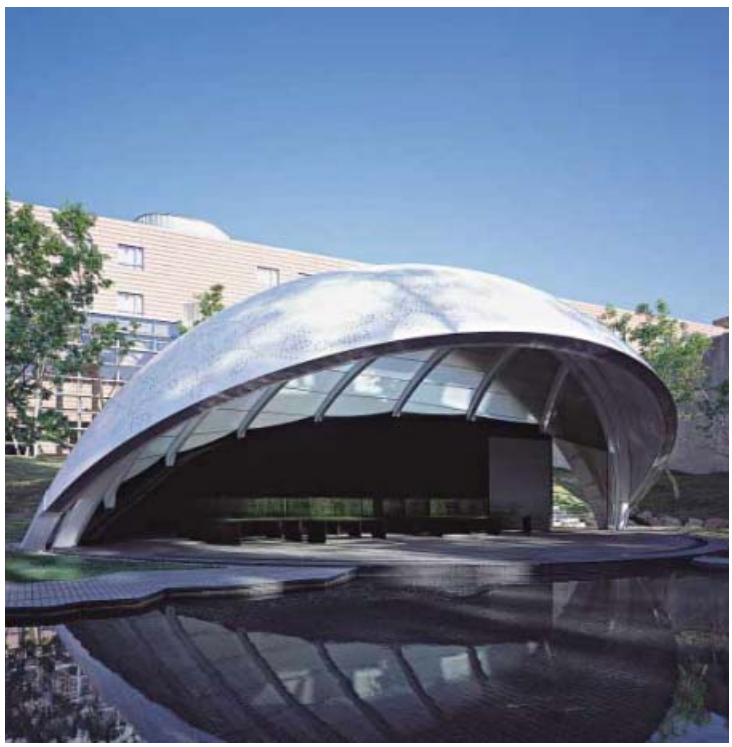
For more information on this project, go to Projects at **www.architecturalrecord.com**.

Theatrics have always played an important role in church architecture. Soaring naves, mysterious lighting, and bold murals have helped fill pews for hundreds of years. Now Klein-Dytham Architecture has taken this strategy into the 21st century, using its own form of stagecraft to add drama to a small wedding chapel in the Japanese Alps. Because the 550-square-foot chapel sits in the garden of a resort hotel and is as much a business as a sacred space, architects Astrid Klein and Mark Dytham could take liberties that might not be appropriate for other religious buildings. Their client, after all, was a businessman who owns hotels and a brewery, not a church leader or congregation. "He knew we are media-savvy and would design something that would attract attention in the magazines," says Dytham.

### Program

Part of the sprawling Risonare resort (designed by Mario Bellini during the economic bubble of the 1980s), the chapel needed to have its own identity and at least the semblance of spirituality. But because people of many different faiths would get married there, it needed an ecumenical design with no iconography associated with any particular religion or sect.

Instead of accommodating a specific liturgical program, Klein-Dytham had to design a chapel that would orchestrate a procession of experiences in a manner both efficient and memorable. Given an attractive garden setting, the architects decided to make nature an important theme of their design.



PHOTOGRAPHY: © KATSUHISA KIDA

### Solution

After the client mentioned the idea of a pergola in an early meeting, Klein and Dytham started exploring designs structured like a pair of leaves. At first they thought about making both leaves out of glass, but soon realized a backdrop offering views of the rolling garden would prove distracting to guests during the wedding ceremony. So they developed one leaf as a veil, a perforated metal surface that would allow light in but block views.

With this notion in mind, the architects decided to translate into built form the climactic moment of every wedding—when the groom raises the bride's veil and kisses her. Using quarter-inch-thick steel panels welded together and attached to a tubular steel frame, Klein-Dytham created a curving wall that slides up and out of the way just as the new-



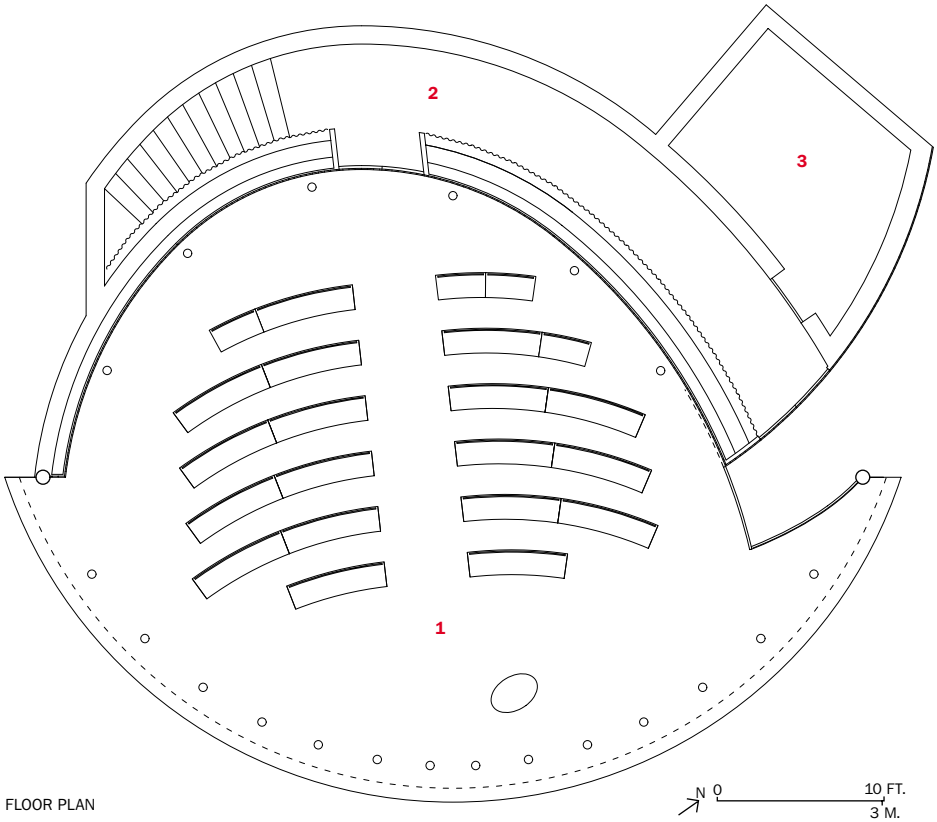
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After the groom kisses the bride, the chapel's perforated-steel "veil" rises (opposite) to let the couple and their guests move to the garden for a toast and photographs (right). The architects used a freehand drawing of ivy, based on henna patterns featured in Indian wedding ceremonies, for the acrylic lenses set into the steel shell (below).





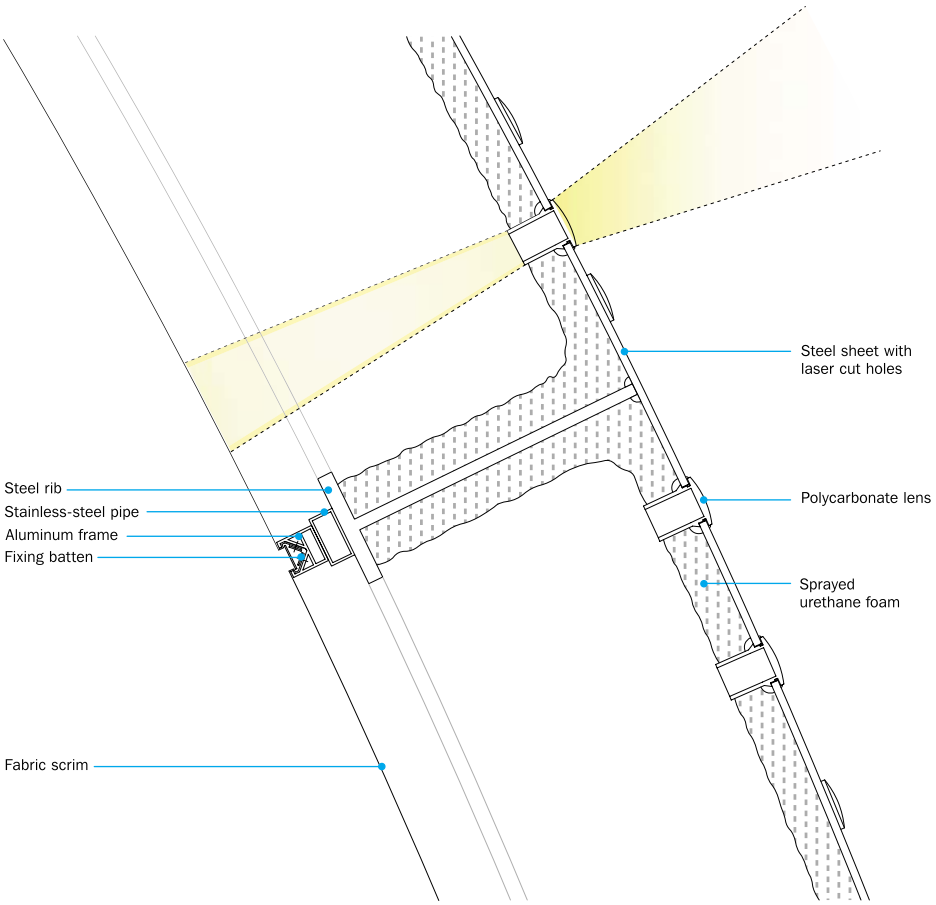
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FLOOR PLAN

1. *Chapel*
2. *Corridor*
3. *Storage*

**Before their dramatic exit into the garden, the bride and her father wait in a velvet-lined corridor behind the chapel (plan, left). Light from the lenses is projected onto a nylon scrim inside the dome (below). Without the scrim, the light would not read as a pattern.**




SECTION THROUGH MOVABLE WALL





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lyweds embrace. Arranged in a looping ivy pattern set into the 11-ton moving wall, 4,700 polycarbonate lenses project light onto a nylon scrim stretched 10 inches from the wall's inside surface. Two hydraulic rams (one at either end) lift the steel veil as if it were a roll-up garage door. "We were concerned about making the whole thing work," says Dytham. "But Kawasaki, who made the rams, said, 'We do stadium roofs that move. This is no big deal.' "

The disappearing wall not only offers a theatrical way of ending the ceremony, but serves the more prosaic function of quickly ushering guests out of the chapel and into the garden for a champagne toast. With everyone out of the building, the steel veil closes, allowing workers to prepare the chapel for the next wedding. Thanks to this careful choreography, the chapel can handle six weddings a day, running on an 80-minute cycle.

Inside the chapel, the architects used black granite for the flooring, stained-black pine for the walls, and black wood pews, so all the men in dark suits blend into the setting and allow the bride in white to stand out. Clear acrylic backrests on the pews encase translucent green "flowers" that seem to dance when sunlight hits them.

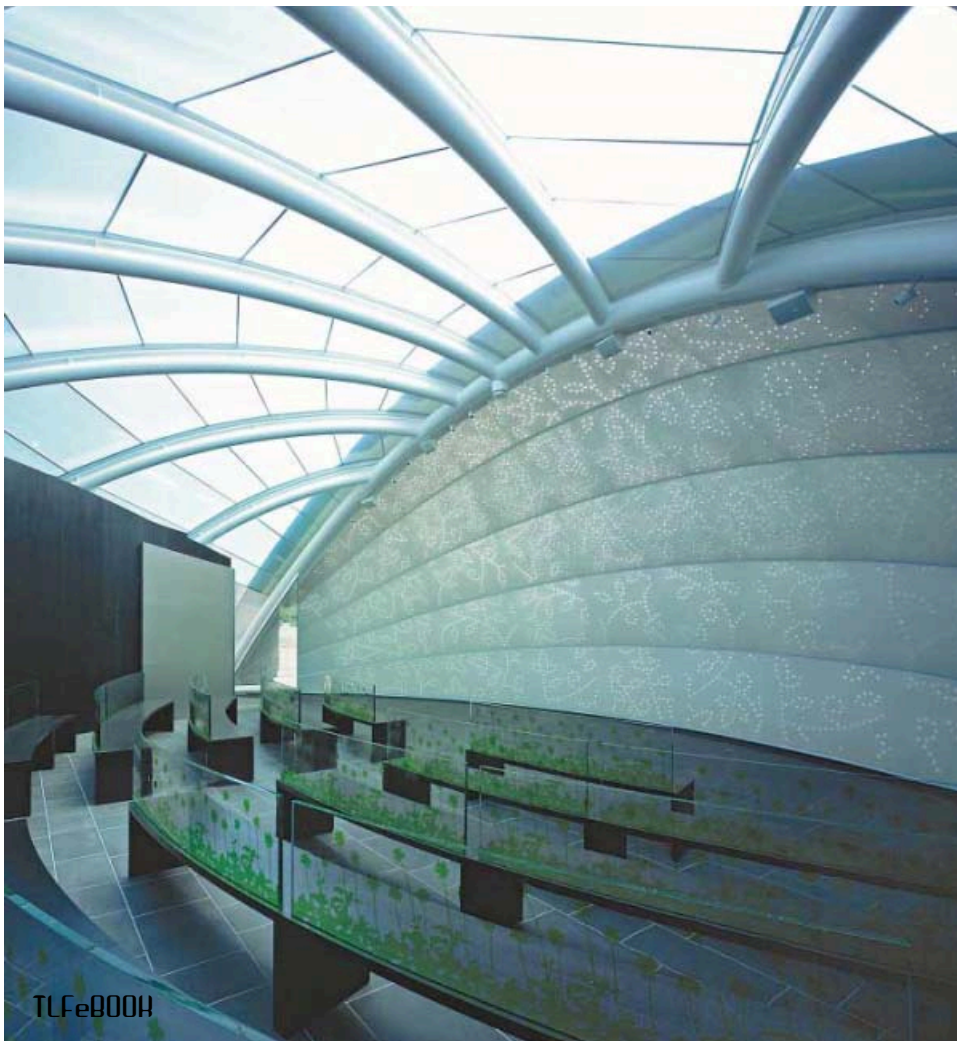
Working with Arup Japan, Klein-Dytham designed the chapel as a lightweight steel structure so it can ride out earthquakes. To minimize its visual impact on the garden when viewed from nearby hotel rooms, the architects pushed it about 12 feet into the ground and tucked it into the sloping site. A concrete basement provides space for radiant heating and cooling that is blown into the sanctuary.

**Commentary**

Having designed temporary structures such as construction fences and exhibitions, Tokyo-based Klein and Dytham understand that buildings exist in time as well as space. They exploited this knowledge to create a chapel in which light and movement change the visitor's experience from one moment to the next. ■

**Klein-Dytham envisioned the chapel as two falling leaves, the front one made of perforated steel and the back one made of translucent glass set between tubular steel "veins" (right and below). The architects designed all the furniture and used mostly black materials (stained wood and granite) for the interior to let the bride stand out in white. The pews have clear acrylic backrests with translucent green "leaves" set within them.**





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# Holy Rosary Catholic Church

## St. Amant, Louisiana

**3**

**TRAHAN ARCHITECTS DELIVERS A POWERFUL STATEMENT IN CONCRETE AND GLASS FOR A SMALL CATHOLIC PARISH OUTSIDE OF BATON ROUGE.**

**By Robert Ivy, FAIA**

**Architect:** *Trahan Architects—Trey Trahan, AIA, partner in charge; Brad Davis, Kirk Edwards, AIA, Bryan Hammond, Michael Monceaux, Melissa Duhon, Lisa Hargrave, AIA, Jason Hargrave, AIA, project team*
**Client:** *Holy Rosary Catholic Church*
**Interior designer:** *Lauren Bombet Interiors*
**Engineers:** *Schrenk & Peterson Consulting Engineers (structural, civil); APEX Engineering (mechanical, electrical)*
**General contractor:** *Quality Design and Construction*

**Size:** *17,700 square feet*
**Cost:** *$2.4 million*

**Sources**
**Poured concrete:** *Sorrento Lumber Company*
**Metal-and-glass curtain wall and skylights:** *Architectural Glass & Metal*
**Modified bitumen roofing:** *Johns Manville*
**Altar and tabernacle:** *Fabricated by Tallix*
**Interior ambient lighting:** *Cutler Hammer*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



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The architecture of rural Louisiana tends toward mélange—often a mock Acadian style mixed with a dollop of neon. Parish churches, which are frequently the most significant structures, anchor the smaller communities. The Holy Rosary Catholic Church complex in the tiny unincorporated town of St. Amant, located halfway between Baton Rouge and New Orleans—near the larger town of Gonzalez—breaks from the formula.

Just 3 miles off bustling Interstate I-10, a collection of modest white buildings, designed in an unapologetically contemporary idiom by Trahan Architects of Baton Rouge, unifies a campus formerly distinguished by a casual jumble of building types. The recent architecture, in the words of Sister Mary John Hotard, the church's pastoral associate, "reflects where we are today."

### Program

While the parish is small in Louisiana terms, consisting of 2,300 families, it had grown beyond the initial capacity of its sanctuary. The original cypress-sided church, dating from 1905, holds only 300 people. Furthermore, when the parish began a master-planning effort with architect Trey Trahan in 1998, its centennial in 2005 loomed large. Parishioners, with a building committee under the leadership of Father Robert F. "Bob" Stine, church pastor, were concerned that the beauty and rural character of their region was being swallowed up in the detritus of the strip-mall economy, currently eating away at nearby communities. Their own complex lacked unity and a sense of permanence. They needed a plan.

Architect and parishioners developed a prioritized list, including an administrative pavilion separate from classroom and other education buildings, and a new chapel or oratory that would seat 25 to 40 people and be appropriate for morning mass or private prayer. Ultimately, the still-standing green metal building called the "Green Monster" would come down, as would other inadequate



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The austere concrete walls of the complex set it apart from the unremarkable Louisiana terrain (opposite). Covered walkways and buildings for administration and education define a rectilinear courtyard within which the freestanding chapel follows its own geometry (right and below).





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structures on the site. Economy dictated that heating and cooling be zoned to allow tempered spaces only during active periods. Money was an object.

Trahan, himself a practicing Catholic, worked closely with the parish, spending a year discussing both function and poetics, including "what the chapel would feel like, how the buildings would function, and what their relationships would be." Models included the work of Louis Kahn and, significantly, Le Corbusier's pilgrimage chapel at Ronchamp. Trahan asserts that his analogies found an appreciative local audience: "Many of them are more sophisticated than we might have given them credit for." The chapel would be both the parish's locus of spiritual activity and a waypoint on a continual spiritual journey, linked to other pavilions by walkways.

**Solution**

Today, an austere concrete wall, punctuated by an overhanging entry, stretches horizontally into the landscape, giving minimal clues to the activities inside. Radically cantilevered reinforced-concrete canopies, which feather out to near-impossibly thin edges, cast shade and shadow on interior perimeter walls and surmount walkways, which connect the primary new buildings. Offices for private counseling sessions face enclosed courtyards, which buffer Louisiana's fierce southern sun from inhabited space and provide privacy and landscaped serenity.

Building systems underscore

**The north side of the administration building (above) looks onto the complex's main courtyard, while its south elevation features a narrow private yard (below), which is now lush with tall native grasses.**



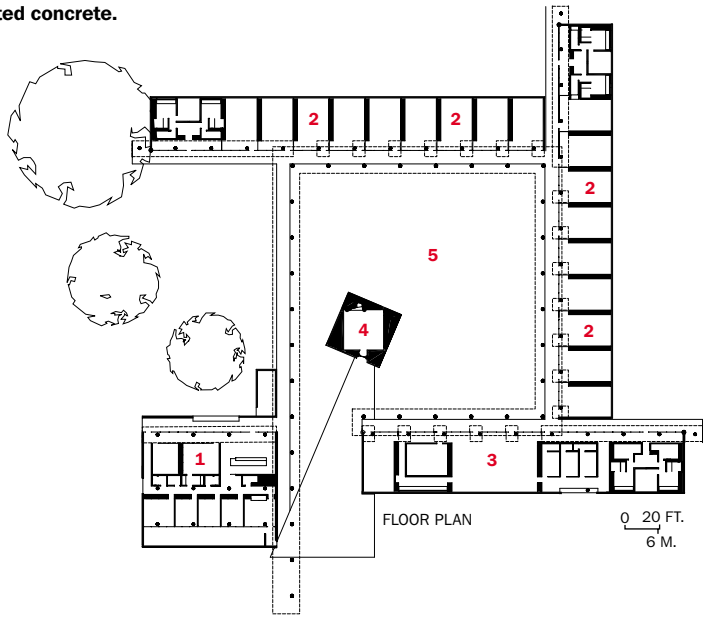


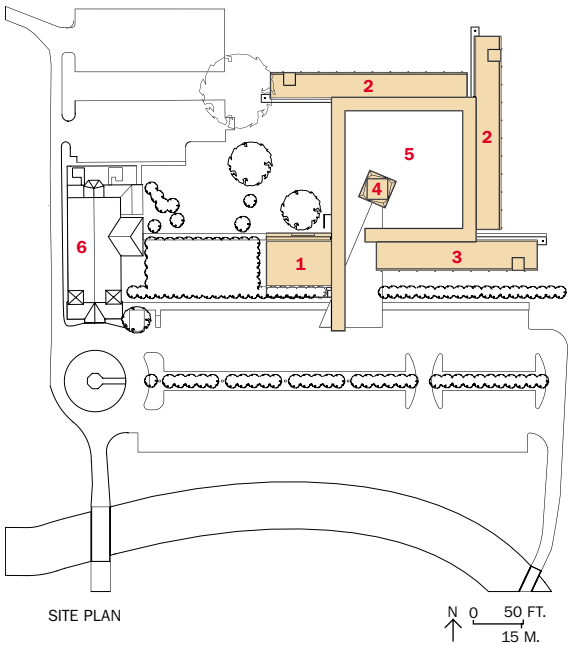
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**In the religious education building (above), daylight slides in from above to wash the lovingly crafted concrete.**

1. *Administration*
2. *Classroom*
3. *Religious education*
4. *Oratory (chapel)*
5. *Sacred precinct*
6. *Existing church*






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**The chapel or oratory is a 30-foot-square space inspired by Le Corbusier's chapel at Ronchamp and the tatami-mat geometry of Japanese buildings. Trahan used the thick walls to sculpt light as it moves inside. The chapel is now furnished with simple wooden pews and a metal-and-wood altar.**

both transparency and enclosure. Concrete walls proved integral to the architect's scheme, which demanded a degree of care unusual for the region. Concrete pours gained added importance from the contractor. "This is art!" read a sign he posted on the walls, alerting the trades to the importance of the work that they were doing. Butt-joint glazing opens interiors to the exterior courtyard.

Central to the entire scheme, the 30-foot-square chapel (which cost an amazingly low $300,000) derives its rotated geometry from Japanese tatami-mat configurations, a notion that spirals out from the building in a pathway to the entire site. This tiny space, both compressive and mysterious, casts light and shadow through a calculated series of apertures based on Christian symbolism. A cast-glass door, conceived and executed by craftsman John Lewis from California, glows with translucent power more brightly at its perimeter, its luminosity softening toward its center. The entire space encourages reflection, a sense of calm, and interiority.

**Commentary**

Holy Rosary Catholic Church demonstrates that powerful ecclesiastical architecture need not achieve cathedral scale. With spare assurance and mastery of form and proportion, coupled with a poetic approach to materials in the manner of Tadao Ando, architect Trey Trahan and his parish client have collaborated to produce a minor masterwork. Parishioners have expressed mixed feelings ("some love the interplay of light and shadow … some find it cold"), and one parishioner, examining the finished concrete wall, asked, "Where's the brick?"

Nevertheless, the chapel and surrounding structures of Holy Rosary join a distinguished pantheon of pilgrimage sites, including those that inspired the architect. The complex will continue to draw its own parishioners into contemplation, while bringing admiring devotees of sacred architecture to a tiny community called St. Amant. ■



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# Seaside Interfaith Chapel
## Seaside, Florida

**4** **MERRILL AND PASTOR HAS COMBINED AN AUSTERITY DRAWN FROM LOCAL TRADITIONS WITH A CIVIC PRESENCE SUITED TO A PROMINENT SITE.**

**By James S. Russell, AIA**

**Architect:** *Merrill and Pastor—Scott Merrill, designer and partner in charge; David Colgan, project manager*
**Client:** *Seaside Interfaith Chapel*
**Consultants:** *Frank Farley & Associates (structural engineering); Sklow & Runkel (mechanical, electrical); Robert J. Laughlin and Associates (lighting)*
**General contractor:** *Breaux Construction*

**Size:** *3,300 square feet*
**Cost:** *$1.5 million*

**Sources**
**Roofing:** *Galvalume*
**Wood roof trusses:** *Universal Building Specialities*
**Wood cladding:** *Western red cedar*
**Wood floors and altar paneling:** *Locally salvaged deadhead heart pine*
**Pews:** *Shaver Millwork*
**Liturgical furniture:** *Meridian Workshop*
**Lighting:** *Bega; Elliptipar; Lightolier; Rejuvenation; Kim*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

Long before there was a celebrated holiday town called Seaside, its planners, Andres Duany and Elizabeth Plater-Zyberk, set aside a place for a church. By the time the town was ready to build one, some 20 years later, Seaside had become famous as the place where New Urbanism was seeded and tested. Its architecture had also considerably evolved from modest beach cottages and shotgun shacks inspired by local prototypes to elaborate confections of columns and cupolas.

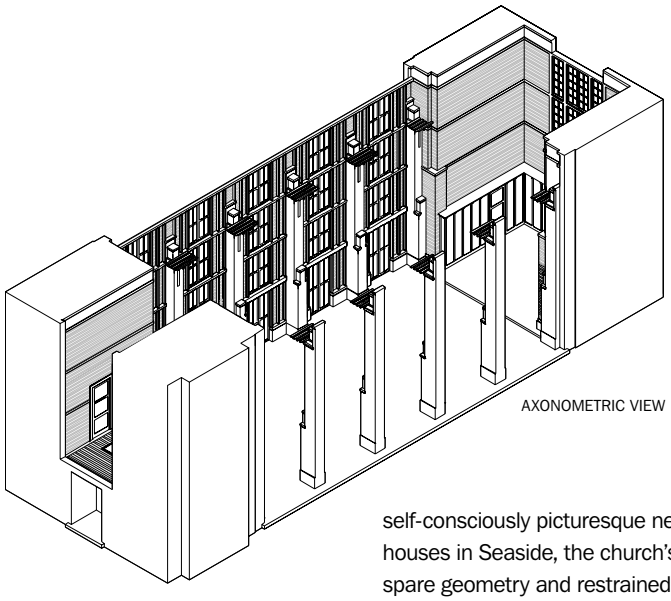
### Program

Although a Sunday beach service was held during the summer, potential congregants were too few, too transient, and too seasonal to support a full-time church until recently. Finally, in 1999 a group of residents set out to build an interfaith chapel, and Robert Davis, Seaside's developer, agreed to donate the land. "The first problem," said architect Scott Merrill, "was that it had to look like a church without reflecting any specific church tradition."

### Solution

"We wanted to show nature and have natural light play a big role," said Patrick Roberts by telephone from his office at the Florida Association of Broadcasters in Tallahassee. Roberts, with his wife Pam, led the chapel-building effort.

Merrill found himself drawn to the basic geometric shapes and board-and-batten construction of old local churches—an austerity enforced by poverty. "That Alabama Stick Style took such great delight in describing the way it was put together," Merrill said. He offered the residents three schemes, one of which did not draw support because it looked too much like a Baptist church, according to Roberts. The board selected the one that most engaged the universal appeal of natural light.



AXONOMETRIC VIEW

As built, it is austerely yet delicately detailed. Volumetrically, its south-facing front elevation is a square surmounted by a pediment dimensioned as an equilateral triangle. The central band of glazing visually narrows the squareness of the base, while emphasizing the beefiness of the structure at the corners, where Merrill has built in the greatest sheer resistance for high winds. Amid the elaborately detailed, self-consciously picturesque newer houses in Seaside, the church's spare geometry and restrained trim help create presence without bigness. "I recognize the validity of small gestures," says Merrill.

Roberts had made his own study of traditional local churches and had noted the "side gardens with picnic tables for outdoor fellowship." In Merrill's design, a cloistered porch and yard serve the same function.

With its narrow vertical bands of glazing, the lofty sanctuary evokes a building larger than the 200-seat space the structure comfortably envelops. The mullioned windows and internal shutters capture the contemplative character of an empty beach, atomizing the mist-laden light. Tall glass panes overlook the altar, opening the chapel to trees and sky while not admitting light where it would silhouette the celebrant.

Services are held in the chapel every Sunday year-round. "People have felt a warmth from day one,"

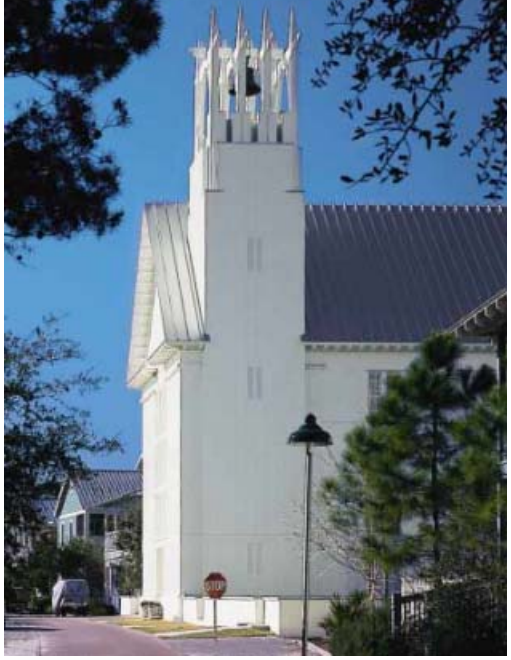
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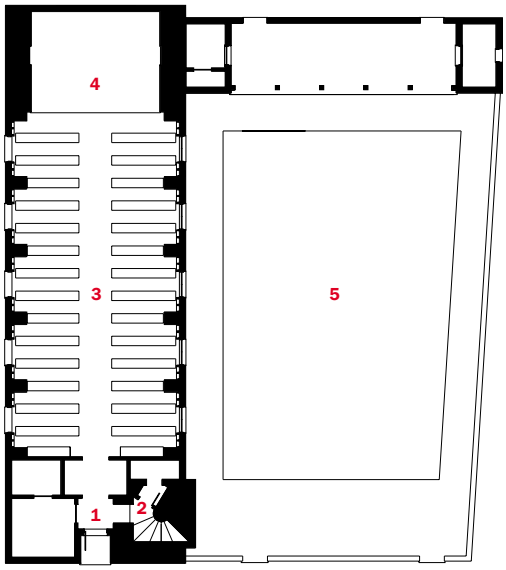
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In the plan of Seaside, the chapel site presides over a civic axis that bisects the town. Merrill centered the 64-foot-tall bell tower on the axis (far right and below), making room for a side garden and cloistered porch (below). Tall bands of glass (near right) open between masonry piers (axonometric, opposite).










FLOOR PLAN

1. *Entry*
2. *Bell tower*
3. *Nave*
4. *Altar/celebrant*
5. *Courtyard*

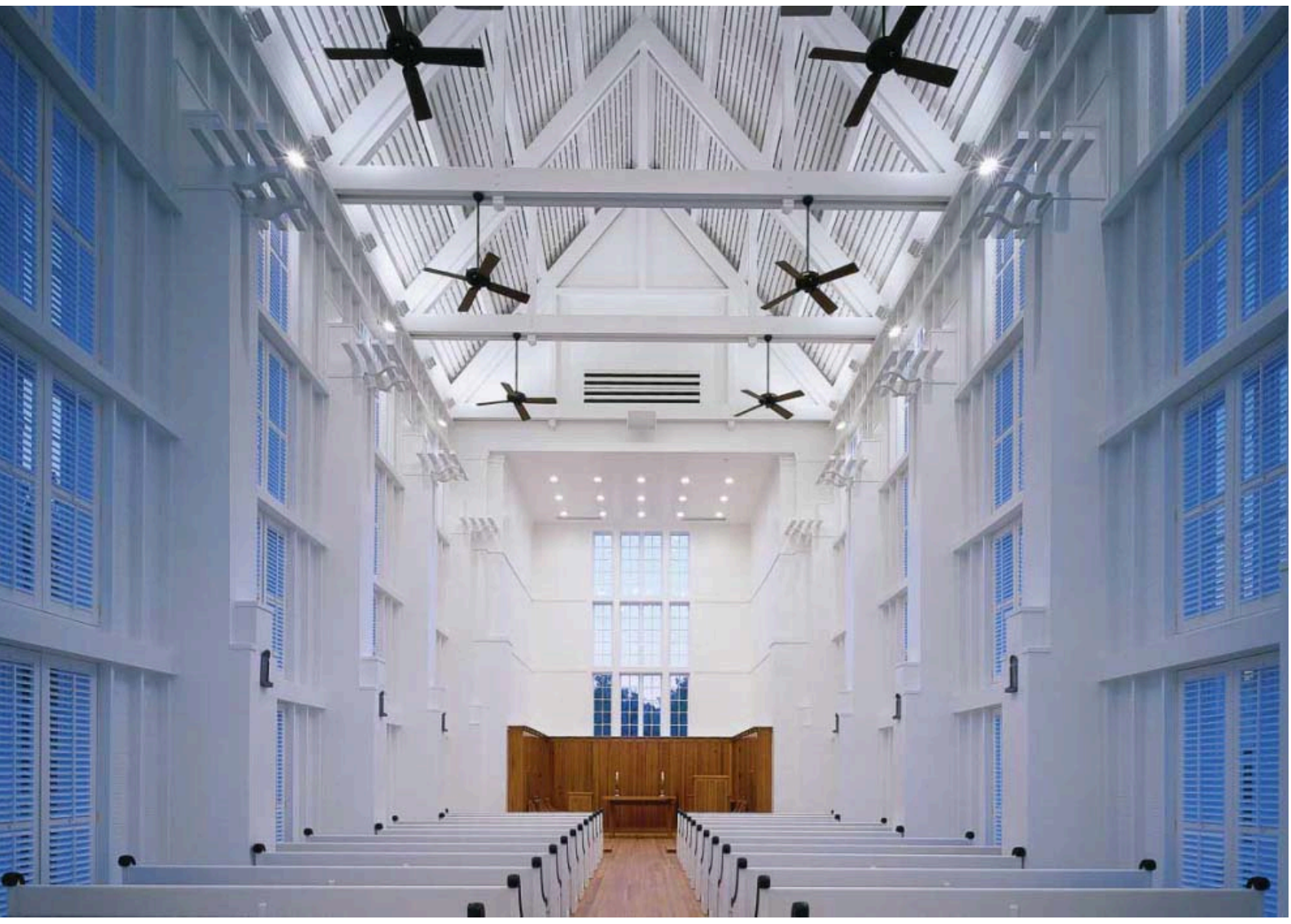
Roberts says, "whether they are Catholic, Jewish, Assembly of God, Southern Baptist, or Episcopal." It acts as an adjunct meeting space for Seaside's charter school and a chamber-music concert hall. Its 100-year-old bell chimes for weddings and warns of hurricanes.

Subsequent ecclesiastical work has taken Merrill in a different direction. His clients want structures that wrap seats around the altar. Glass is used sparingly "because entertainment in the form of amplified music and video is so much a part of the celebration now." He's wistful about the loss of connection to place this entails. "As you take away what distinguishes one from another, they become more generic."

## Commentary

The tautness of the Seaside chapel's board-and-batten exterior suggests the poverty-seared austerity of the local tradition it draws upon. Out of telling details, Merrill has been able to combine this modesty with a gracious but welcoming monumentality suited to the place the town has made for the chapel. Merrill's design proclivities are traditional, but by examining tradition with a critical eye, he ends up with an elegant abstraction that quietly speaks to the way it is made as well as to the diversity of celebrations it accommodates. ■

**Like old local churches, the chapel "describes" its construction. Wall surfaces carry gravity and wind loads through exposed studs to thick horizontal girts, which connect with stucco-covered masonry piers.**





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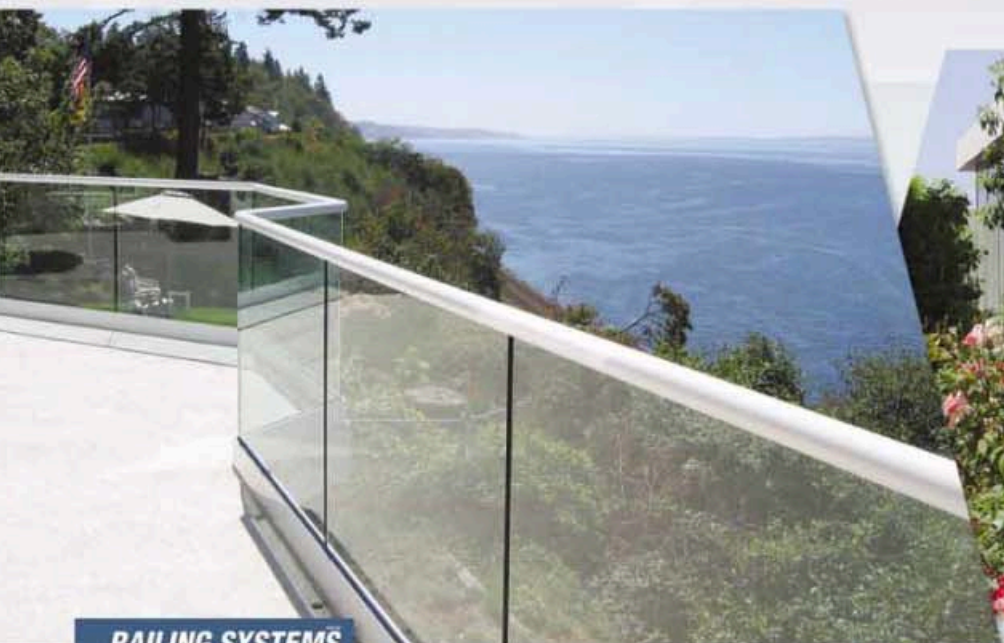
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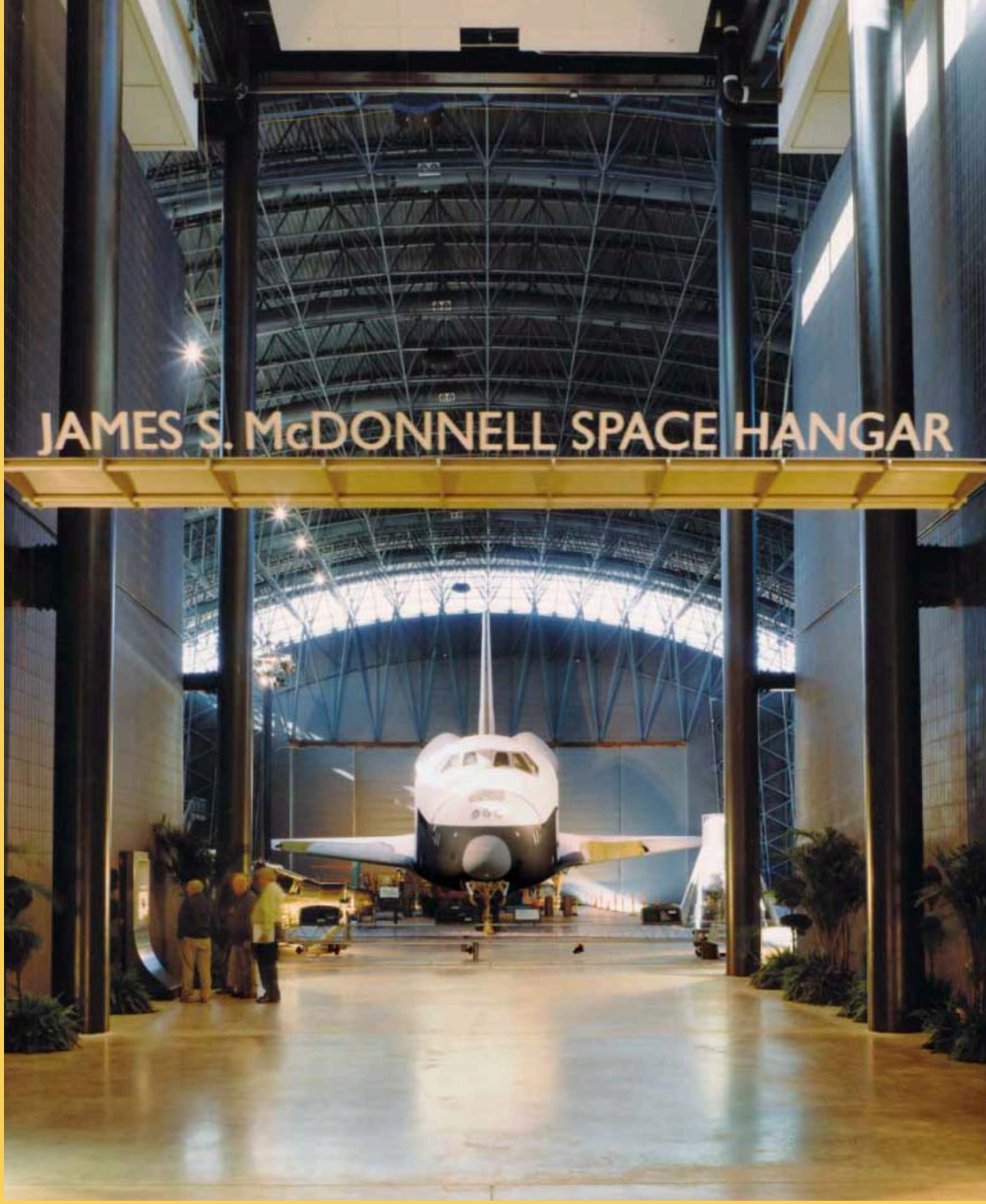
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# Born Again: A New Skin Offers a Fresh Start

**THE RECLADDING OF THE RICHMOND, VIRGINIA, CITY HALL IS AN INVESTIGATIVE STUDY OF THE INTIMATE RELATIONSHIP BETWEEN ARCHITECTURAL DESIGN AND THE LIFE EXPECTANCY OF MATERIALS**



**By Sara Hart**

Although there are no hard numbers, anecdotal evidence suggests that, in particular circumstances, curtain walls age faster and more painfully than the rest of a building. It seems that they're coming unglued, so to speak, with increasing regularity. As many of the curtain walls of 1960s and '70s high-rises begin to show signs of deterioration, owners must weigh the costs of the many reparative options available, and they must enlist design experts to determine the best course of action. The problem is becoming pervasive enough that facade consulting is a growing multidisciplinary specialty in the architecture profession.

Built in 1970, the Richmond, Virginia, City Hall houses the staff and administrative offices of the city government, mayor, city council, and school administration, as well as offices for 18 departments and agencies; it is home to more than 800 employees. The building had served the community well for 27 years, but in the mid-1990s, the city discovered that the facade was losing its structural integrity at a steady and alarming rate.



**Before and after: Richmond City Hall got a new and improved identity when its deteriorating marble facade (right) was replaced with one of granite and aluminum (left).**

In 1997, Richmond commissioned a team of consultants led by Fred Ortiz, AIA, of Scribner, Messer, Brady & Wade Architects (SMBW) of Richmond, and Daniel Lemieux, AIA, of Wiss Janney Elstner (WJE), of Fairfax, Virginia, to identify the extent of damage and devise a plan to revive the building and the city hall's image as expressed in its architecture. Thus began a four-year effort involving forensics, emergency remediation, cost analysis, facade removal, redesign, and replacement.

This kind of commission appears to be a backward approach to architectural design, and not every architect's cup of tea. Not only does the architect start with someone else's design, it is a design that has failed to a greater or lesser degree, with serious consequences. And yet, there are regionally committed practitioners who feel a civic obligation to aid urban revitalization. "The City Hall project resonated with the core value of our practice," says Willard Scribner, FAIA, principal of SMBW Architects. "In an era when cities throughout Virginia and the Southeast face pressing infrastructure needs and declining resources, we seek ways to help address these needs through design excellence, innovative strategies, and funding vehicles."

The following story is based primarily on the study prepared by WJE for SMBW, which eventually led to a new architectural image for Richmond. As part of the study, SMBW and WJE's project team reviewed all the available documentation regarding the original design and its construction, repairs, and renovations over the years, and routine maintenance. Next, they performed an on-site survey to verify the as-built construction of the building, including materials, components, and systems. They found that the infrastructure was functional and in relatively good working order, but that the marble panels of the building envelope were not. As a matter of fact, cupping/bowing, edge-cracking, and other conditions were visible in many of them.

The city hall is a marble-clad rectangle with a tower that rises from the center of a four-story plinth that is divided into quadrants. The tower is a straightforward, uniform structure, articulated by perimeter

## CONTINUING EDUCATION

*Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 268 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include the following sponsored sections: "Factors for Achieving Water Conservation Excellence," sponsored by Sloan Valve, page 284; "Greater Vision: Alternate Window Materials in Commercial Buildings," sponsored by Pella, page 293; and "The Art of Product Research and Selection," sponsored by Sweets, page 299.*

### LEARNING OBJECTIVES

*After reading this article, you should be able to:*

1. *Describe possible problems with marble veneer buildings.*
2. *Explain the cause of the problems with marble veneers.*
3. *Discuss the various remedies for buildings with veneer problems caused by environmental conditions.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **www.architecturalrecord.com**.

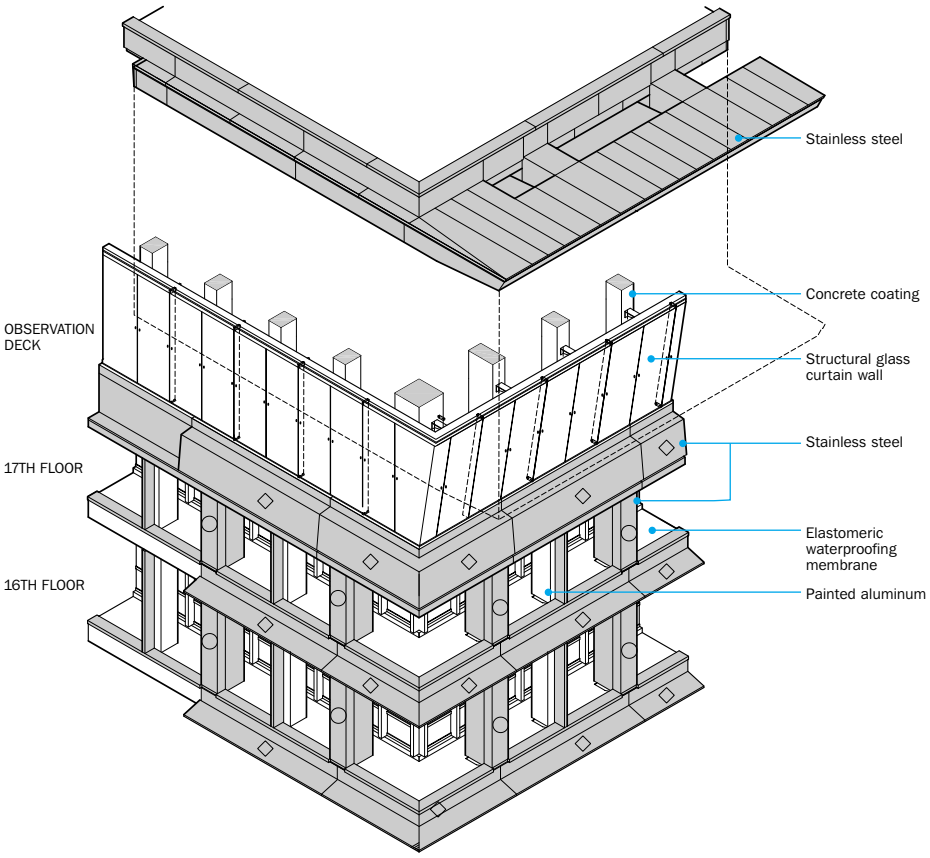
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**The new aluminum-clad observation deck (left) replaces the prior one (below). The original window frame enclosed only three quarters of the opening and was topped off with a "suicide hook"—bent stainless-steel square rods with a sharpened point. The new windows are thoroughly glazed. Panels are hung from vertical aluminum-rail brackets anchored to the concrete column (bottom).**




TOWER SOUTHWEST CORNER COMPONENT ASSEMBLY AT OBSERVATION DECK







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**A stainless-steel capital tops the painted concrete column (left and opposite, top) fronted by granite cladding. The diagram at right shows how the structural system at the perimeter works.**

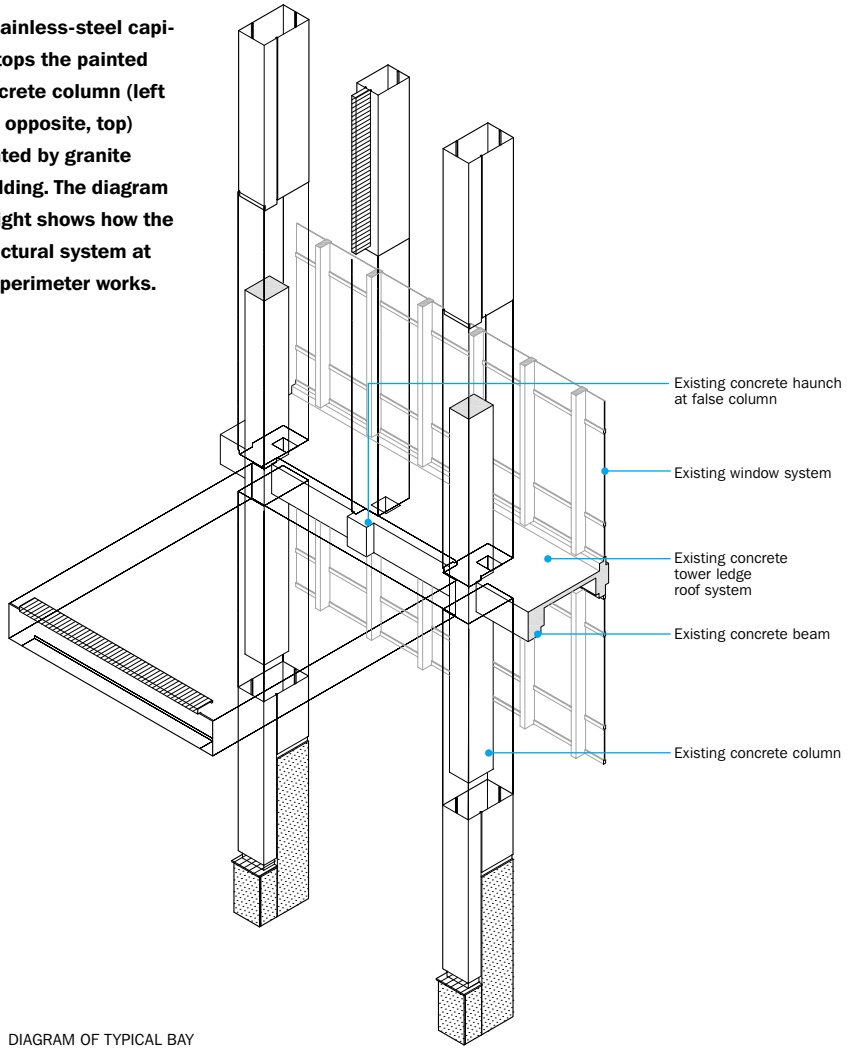



DIAGRAM OF TYPICAL BAY



columns that are detached from the exterior curtain-wall system so that the fenestration appears to be made up of deeply recessed windows.

### The problem

The thin marble veneers that cover the entire structure were the problem. Microscopically, certain marbles are composed of a series of tightly interlocked, crystalline calcite grains that are adhered together with a calcite binder. Changes in temperature reek havoc on this type of structure by causing intergranular fractures, or microcracking, in the calcite binder. The grains within the binder "disassociate," meaning they come apart. This constitutes a permanent change in the material properties of the marble, which causes a volumetric expansion. And the march toward deterioration begins. This condition is known as *hysteresis*, and it's as bad as it sounds.

Hysteresis is especially threatening to thin marble veneers, a popular cladding material in the 1970s. Not only are the panels of Georgia white marble on the city hall thin, they have a coarse grain, which makes them more prone to hysteresis than fine-grain marbles, such as Vermont marble.

In hysteresis, individual panels will deteriorate at different rates, depending on the extent of exposure to temperature changes. Obviously, the exterior faces, which are exposed to sunlight and weathering, will experience hysteresis more than the protected, interior areas. Because the exterior surfaces therefore deteriorate faster, the panels will cup and bow outward. Severe weathering will cause visible cracking at the panel edges. As the bowing gets worse, moisture penetration increases, and the cracks in the exposed panel surfaces open up more.

In cities, acid rain can accelerate the dissolving of the calcite binder, which increases the rate of disaggregation of the stone. Disaggregation is also known as "sugaring," due to the loose, powdery calcite grains that appear on the exposed surfaces when this happens. This leads to more edge-cracking and distress within the panels, which, in turn, leads to significant strength loss in the stone.

For the past 30 or 40 years, hysteresis has been acknowledged as a serious condition affecting marble, but its effect on thin stone veneers was not widely known at the time Richmond City Hall was designed and

**FOR 30 OR 40 YEARS, HYSTERESIS HAS BEEN ACKNOWLEDGED AS A SERIOUS CONDITION AFFECTING MARBLE.**

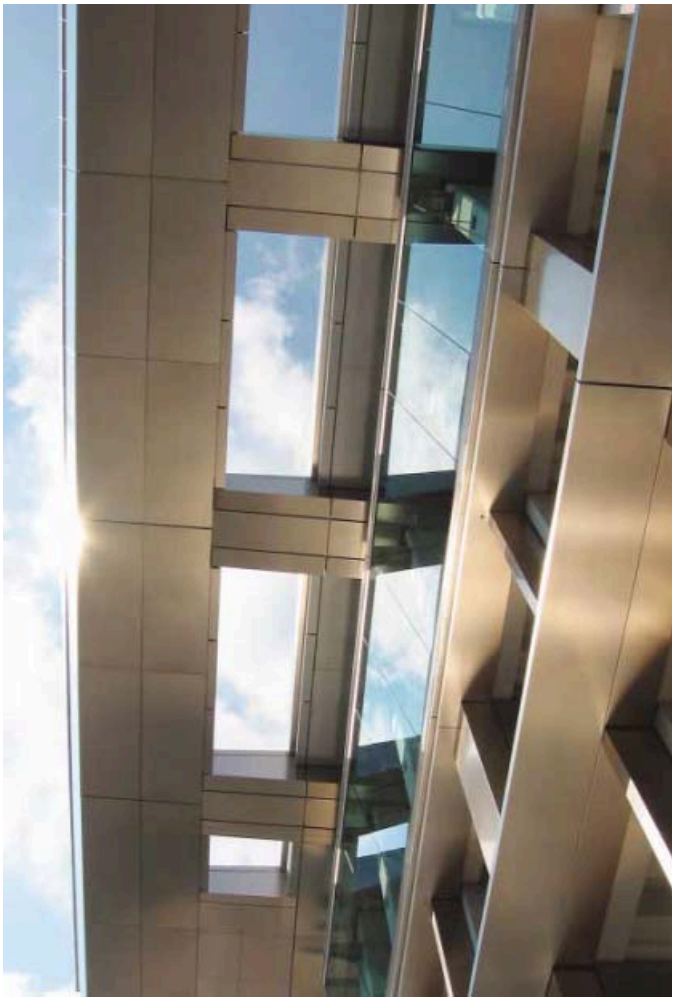
built. Today, it is generally accepted that hysteresis is what might be called a terminal disease for thin marble veneers, since it can neither be reversed nor cured. Once the disease has reduced the flexible strength of a marble panel to between 400 and 600 psi (1,000 psi is the current minimum industry standard), the structural integrity of the stone has probably been forever lost, and in situ repair or stabilization is no longer a viable option. Eventually, the panel will become so fragile that it will become dangerous to leave it on the building. This was the case with Richmond City Hall, as the SMBW and WJE study reported.



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**Horizontal fins on the southern face of the building (below) will help reduce direct sunlight and heat gain. An aluminum overhang (right) mimics the cornice lines of neighboring buildings.**





### Buying time

In October 1995, before WJE and SMBW entered the picture, a temporary solution was implemented in the name of public safety. Five thousand fiberglass straps and corner supports were installed around the envelope to ensure that the marble panels stayed in place. "While the straps prevented shards of marble from falling to the sidewalks below," explains Scribner, "they restrained thermal movement, which caused further bowing of the panels and accelerated the deterioration process." It couldn't have come as a huge surprise that over the years the deterioration continued, and new cracks developed that again raised serious concerns about public-safety issues and called for a genuine architectural solution.

**THE PANEL WILL BECOME SO FRAGILE THAT IT WILL BECOME DANGEROUS TO LEAVE IT ON THE BUILDING.**

This is why, in September 1997, SMBW and WJE were called to study the situation further and search for a long-term solution. After the forensic part of their study was concluded, the team suggested immediate short-term mitigation for the different areas of the complex to complement the fiberglass-strap treatment. The marble panels in question are of two thicknesses. The tower's fascia and soffit panels are 2 centimeters thick, while the quadrant panels are 3 centimeters. The panels range in size from 6 to 18 square feet, depending on location, and are supported by different types of dead load anchors and "hairpin" anchors, many of which had become disengaged, or at least were observed to be overstressed.

Whereas the study was detailed and comprehensive, only a summary of the final recommendations can be included here. With regard to the quadrants, the study concluded that laboratory-tested marble samples had higher flexural strength, and panel substrates and anchors were in better shape than other areas of the building. It therefore recommended that temporary pinning/stabilization was a viable, short-term solution, with the added recommendation that visual inspections be frequent.

The tower, however, was more vulnerable to failure due to strength loss evidenced by bowing and edge-cracking. Consequently, the pinning/stabilization recommended for the quadrants was not an option. SMBW and WJE insisted that the worst panels be removed immediately. In this instance, they recommended that they be temporarily replaced with a fully anchored exterior-grade plywood or similar weather-resistant material, painted to match existing marble, and sealed to resist moisture penetration. As with the quadrants, the study recommended frequent close-range surveillance.

### The options

With the immediate crisis resolved, it was time to pursue a design strategy for the total recladding of the tower and quadrants. Due diligence



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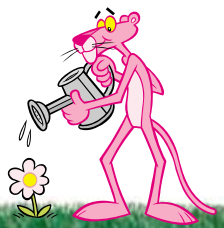



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**Several features distinguish the new cladding (right) from the old. The nonstructural columns in the original marble-clad envelope (far right bottom) were removed in order to open up the corners in the new scheme (far right top).**

required that the architects study every material option. Material durability, service life, serviceability, aesthetics, exposure, cost, and relative constructability were the important factors for consideration. They researched granite, limestone, lightweight natural stone panels, architectural precast concrete/cast stone, glass-fiber-reinforced concrete (GFRC), precast-polymer concrete panels, exterior insulation and finish systems (EIFS), aluminum composite panels, and solid aluminum panels.

Each material had advantages and disadvantages, and with the right detailing, any of them could have performed well. However, the architects were focused on only one application—the envelope of Richmond City Hall. Therefore, they limited their judgments to the unique conditions presented in this particular case. As narrowly focused as they were, each material was studied carefully and its attributes and shortcomings were documented in the study. For instance, granite has a higher minimum compressive and flexural strength, which resists the effects of hysteresis, making it an excellent choice with regard to durability and long-term performance. Limestone has these qualities, as well, but requires a greater thickness to meet acceptable safety factors. Lightweight stone panels are relatively new to the architectural industry and were created as an alternative to high-cost natural stone. The typical panel is a thin layer of natural stone and epoxied aluminum honeycomb, which provides structural stability.

Precast concrete/cast stone is durable and less expensive than natural stone and can be formed to many different sizes and shapes and colored, or else finished in a wide range of textures. GFRC is similar to precast. The fiberglass reinforcing supplements or replaces steel reinforcing, thereby reducing the dead load by up to 75 percent. Precast-polymer concrete panels use polymer in addition to or instead of Portland cement. The type of polymer used is an important consideration, especially when freeze-thaw conditions are a determining factor. EIFS are a multicomponent exterior wall systems, consisting of insulation board with a base coat reinforced with glass-fiber mesh, an adhesive or mechanical attachment devise, and a finish coat to protect the entire system. Aluminum composite panels are similar to lightweight natural stone panels. Solid aluminum panels are also lightweight and durable and can be detailed for simple installation.

## DUE DILIGENCE REQUIRED THAT THE ARCHITECTS STUDY EVERY REASONABLE MATERIAL OPTION.

### The proposal

All of these options were presented to the city with recommendations for or against their appropriateness. For the purpose of a design study, SMBW suggested that they proceed with a granite and aluminum com-



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Photo courtesy of COSI

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posite metal (ACM) combination. (Although an in-kind replacement of marble with granite would be the most straightforward solution, it would also be the most expensive.) Granite panels proved to be the best stone alternative within the structural loading criteria, for unlike marble, it resists the effects of hysteresis, making it an excellent choice with regard to durability and long-term performance. ACM is cost-effective and as durable as a solid aluminum panel when correctly installed. It is fabricated from coils of predetermined widths, so more money can be saved by dimensioning the panels to minimize waste. The metal is coated with a high-performance paint, but SMBW recommended a metallic finish to reveal the material's nature.

SMBW developed a strategy for optimizing the visual effect of the granite by limiting its use. Although seemingly contradictory, this approach resolved many issues. Granite would be applied at the quadrant levels and the council chambers, where it could actually be seen from ground level. Aluminum would replace granite on the tower, thus avoiding having to hang granite panels from wires, which were the typical soffit conditions. Furthermore, the column enclosures in the tower, clad in marble, could be reduced by 35 percent in perimeter size, because they only enclosed the m/e/p systems, not the structure. In addition, corner columns could be removed entirely, improving views from corner offices. Finally, the new scheme included a projection at the roof line on the building's front to create a cornice, which would be more architecturally in tune with the cornice lines of surrounding buildings.



**New lighting at the observation deck will be turned on at night, allowing the city hall to glow like a beacon in the skyline.**

SMBW project manager Fred Ortiz summarizes the effects of their efforts: "We took advantage of reskinning the building with a new image in mind that was progressively Modern in nature while sensitive to Richmond's traditional past and fast-changing urban context. The new face will redefine the tower's presence on downtown's main thoroughfare and mark the skyline in distinct fashion. It's a new beginning." ■

## AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

### INSTRUCTIONS

- **Read the article "Born Again: A New Skin Offers a Fresh Start" using the learning objectives provided.**
- **Complete the questions below, then fill in your answers (page 378).**
- **Fill out and submit the AIA/CES education reporting form (page 378) or download the form at www.architecturalrecord.com to receive one AIA learning unit.**

### QUESTIONS

**1.** The problem of curtain walls having hysteresis is prevalent in which group of buildings?
- **a.** all buildings from the 1960s and '70s
- **b.** all buildings with a thin marble veneer
- **c.** all buildings with a natural stone veneer
- **d.** marble-veneer buildings with calcite grains and a calcite binder

**2.** Disaggregation of stone is also known as which?
- **a.** cracking
- **b.** hysteresis
- **c.** sugaring
- **d.** expansion

**3.** Hysteresis, which is an incurable condition caused by changes in temperature, can be visually detected by all except which?
- **a.** marble panels will be cupped
- **b.** marble panels will show cracked edges
- **c.** marble pieces will fall off the building
- **d.** marble will change to a darker color

**4.** Hysteresis is caused by which?
- **a.** cutting fine-grain marble into thin veneer
- **b.** microcracking in the calcite binder
- **c.** loss of strength in the marble panel
- **d.** moisture penetration at bowed edges of the marble panel

**5.** What causes the acceleration of hysteresis?
- **a.** temperature changes
- **b.** exposure to weather
- **c.** extremely dry weather
- **d.** a and c

**6.** Which material is most prone to hysteresis?
- **a.** thin marble veneer with fine grain
- **b.** thin granite veneer
- **c.** thin marble veneer with coarse grain
- **d.** thin limestone veneer

**7.** Glass-fiber-reinforced concrete uses fiberglass instead of steel reinforcing, resulting in which benefit?
- **a.** reduction of dead load up to 50 percent
- **b.** reduction of dead load up to 75 percent
- **c.** reduction of freeze-thaw concerns
- **d.** increased stability

**8.** What material was used for the temporary replacement of the tower panels after the problem was discovered?
- **a.** fiberglass panels
- **b.** aluminum sheets
- **c.** exterior-grade plywood
- **d.** polymer concrete panels

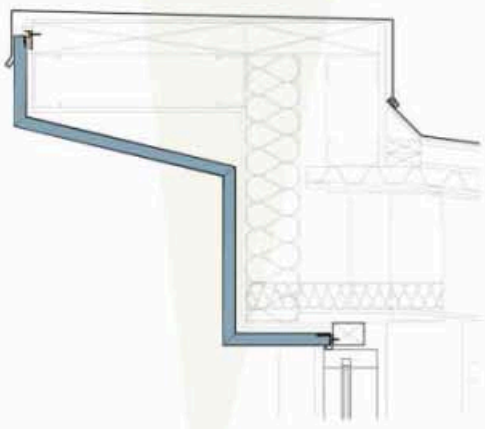
**9.** Which is true for both marble and granite?
- **a.** they are natural materials
- **b.** they show the signs of hysteresis
- **c.** they can be mined in the U.S.
- **d.** they show color variations

**10.** Which was not an advantage of changing the tower cladding from marble to aluminum?
- **a.** column enclosures could be reduced in size
- **b.** corner columns could be removed
- **c.** material waste could be minimized
- **d.** the original look could be maintained



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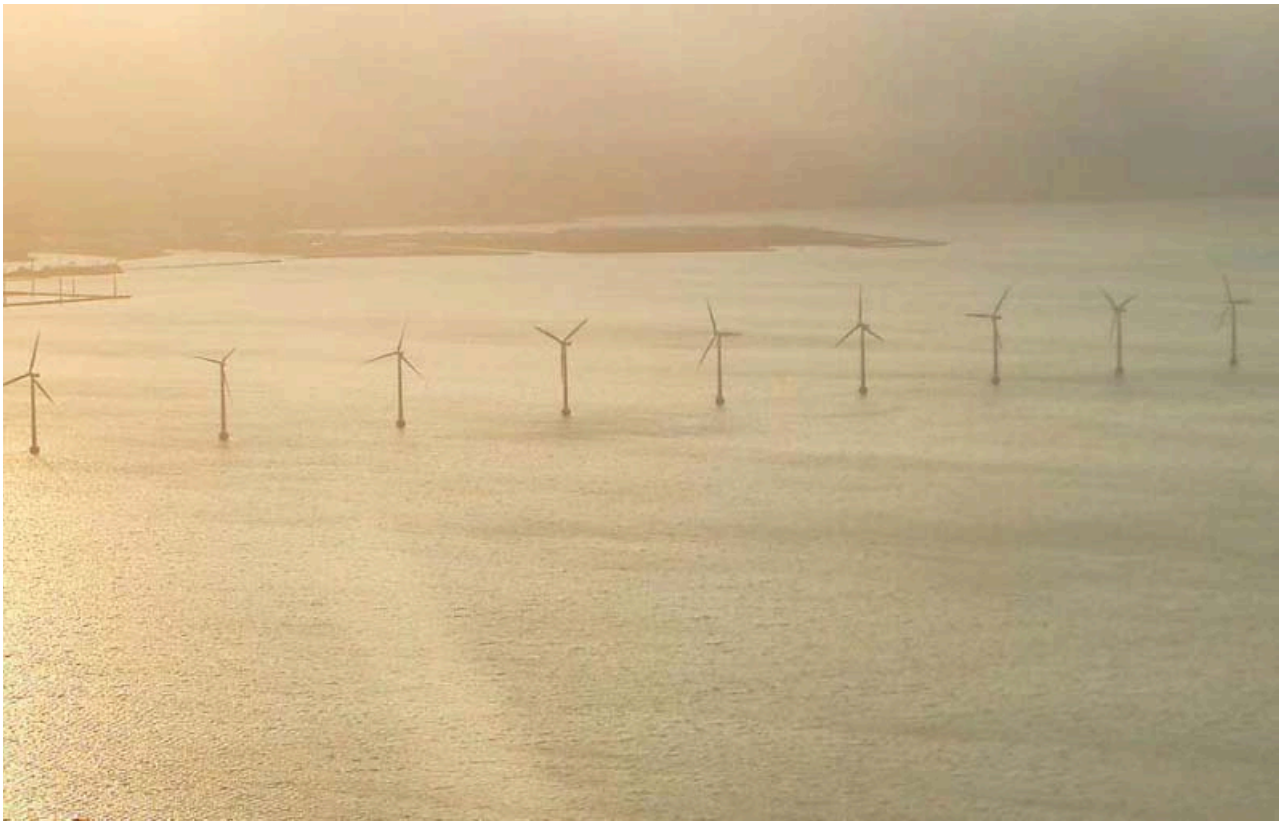
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**Tall, but never more powerful than their environment, turbine blades turn gracefully to the rhythms of the wind. At the Kattegatt waterway between Denmark and Sweden (left), turbines are visible from various vantage points in Copenhagen harbor.**



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PHOTOGRAPHY: © KEN KRUCKEMEYER

# A Mighty Wind is Blowing Across Land and Sea

**THE WIND POWER INDUSTRY IS ROBUST, THERE IS ABUNDANT AND DETAILED INFORMATION READILY AVAILABLE, AND THE POTENTIAL FOR CLEAN, ENDLESS ENERGY HAS NEVER BEEN MORE ATTAINABLE**

**By Barbara Knecht**

In the 1920s and 1930s, electric radios were the primary form of entertainment and access to news, including FDR's fireside chats. However, only about 10 percent of America's farm families had electricity from a central source. In order to sell radios, the manufacturers sold small wind turbines to generate electricity to power the radio, as well as a few electric lights. Perhaps a million small turbines dotted the landscape of rural America during the Depression. In 1936, FDR created the Rural Electrification Administration to run power lines to family farms. Eighty years later, the American wind industry has been resurrected, and wind is the fastest growing energy source worldwide, expanding at a rate of 32 percent annually.

Windmills or turbines are the opposite of fans. A fan uses electricity to create wind; a turbine uses the wind to create electricity. Wind turns the turbine blades, called aerofoils, which spin a shaft that drives a generator that makes electricity. Electricity generated by turbines is measured in kilowatts (kw) and megawatts (mw). Turbines are rated by their peak power; actual production is less, as a result of varying wind speeds. Consumption is described by energy, a function of power and time. Germany is the leader, with 14,609 mw of installed power, and the U.S. is second with 6,347 mw. One mw is enough to supply 250 to 300 average American homes. Tiny Denmark (population 5.4 million) produces 3,110 mw of pollution-free power from the wind. Denmark's Wind Industry Association (www.windpower.org/en/core.htm) aims to supply 50 percent (16 billion kilowatt hours [kwh]) of its consumption by 2025, while the U.S. Department of Energy (DOE) has set 5 percent (250 billion kwh) as a goal for the U.S. by the year 2020.

*Barbara Knecht is an architect and journalist based in New York and Boston. She contributes to RECORD regularly on building science and related technologies.*

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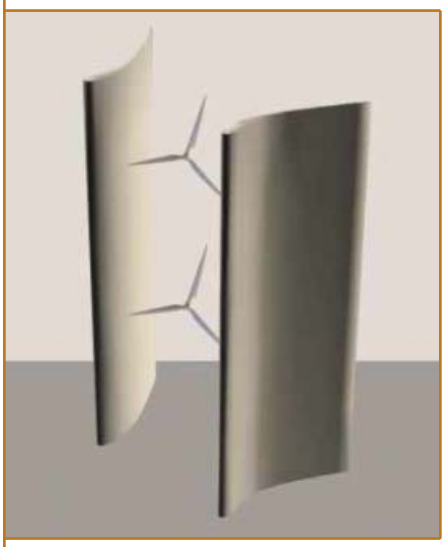




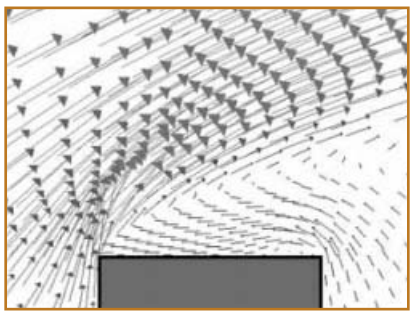
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## Wind Energy in the Built Environment

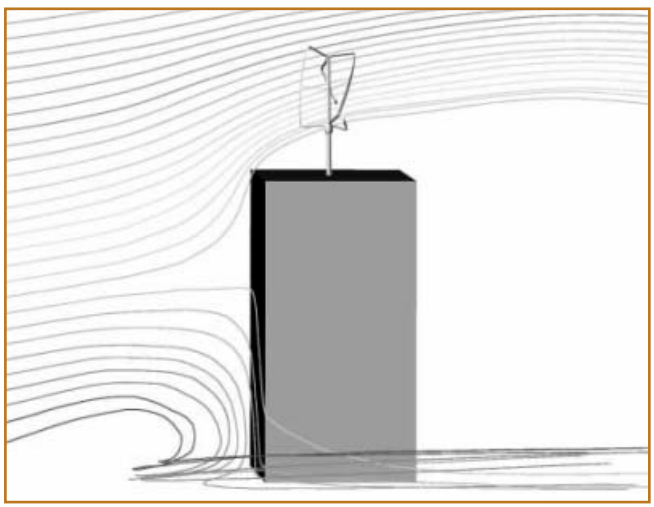
**Sander Mertens, who was aerodynamic engineer of the Turby wind turbine while a researcher at the Technical University of Delft, created these diagrams to show how buildings can be designed so that wind harvest is maximized.**



Example of shrouded horizontal wind turbines—wind turbines between airfoil-shaped buildings. Such building shapes are able to accelerate the wind speed for certain wind directions. The wind turbines in the accelerated wind speed thus show an increased energy yield compared to bare turbines.



Velocity vectors around a sharp-edged flat roof found by a Computational Fluid Dynamics calculation. Note that the vector length and accordingly the velocities close to the roof are small and partly directed toward the wind. A wind turbine has to be sited carefully in this region with low velocities, however, because the region experiences high turbulence, as well.



Streamlines of the flow around a sharp-edged flat roof found by a Computational Fluid Dynamics calculation. The boundary separates at the upwind roof edge, and the main flow around the roof is deflected. The wind turbine is the vertical axis wind turbine called Turby, which is specially designed for application in the built environment and on roofs.

Windmills, or turbines, have evolved a long way from the stumpy but picturesque multibladed wood-and-brick structures so firmly symbolic of the Dutch countryside. Go to Holland (or the United Kingdom, Spain, India, Germany, Denmark, Sweden, Greece, Egypt, Japan, China, parts of Africa, California, Texas) today, and you will find soaring turbines with two- or three-bladed rotors made of materials such as steel, Teflon, and fiberglass, some reaching 300 feet in height.

Typically, the basic components of turbines include the blades, which are attached to a spinner or hub, and the gearbox and generator, which are housed in a covering called a nacelle. The controller and brake are also located within the nacelle (see diagram, page 278). New products are invading the market, including direct-drive machines that eliminate the gearbox and longer, stiffer, more slender blades of lightweight material, such as carbon fiber. Turbines typically have a minimum operating speed, called the cut-in speed, around 7 to 9 mph, as well as a maximum, or cut-out, speed, typically around 55 mph. These are characteristics of utility-scale turbines found singly or in groups by the dozens or even hundreds in wind farms or parks. They are also known as wind-power plants and are found on land or, commonly in Europe, offshore, where winds are plentiful and unobstructed, and space for the turbines is readily available.

In spite of all these advances to harvest free energy, the U.S. still produces more than 50 percent of its electricity from coal, 20 percent from nuclear, and 16 percent from natural gas. Only 7 percent comes from hydropower, and under 1 percent from renewables such as sun and wind. That the cost of producing electricity with wind power has plummeted is an encouraging sign, but cost comparisons are tricky. Conventional fossil-fuel sources are heavily subsidized. However, experience in Europe and the U.S. proves that utility-scale wind farms can produce electricity that costs virtually the same as fossil fuels, which is about 3 to 5 cents per kwh. Small-scale wind-collection systems are emerging and offer a lot of opportunity for thinking about building integration and urban applications.

Wind can't be supplied continuously the way fossil fuels, such as coal, can be fed into a furnace. When the wind doesn't blow, there is no energy produced. However, it doesn't take a lot of wind to run a turbine, and more and more researchers are figuring out how to design ones that will operate efficiently at low speeds and in turbulent urban conditions. Imagine a gentle breeze that rustles the leaves and causes a light flag to extend, and you can imagine a wind speed of 8 to 12 miles per hour, an optimum average speed to run most turbines. But the wind doesn't blow steadily, and a turbine can't produce at top capacity consistently, anymore than fossil-fuel plants can. Typical efficiency for a wind turbine is 25 to 35 percent, compared to 65 to 85 percent for a coal plant.

There are many levels of energy independence. California leads the U.S. with five large-scale wind farms with a 2,000 mw capacity. Compare that with the Princeton, Massachusetts, wind-power plant of 250 kw that produces 1 percent of the town's need. The typical size of an individual turbine in a wind farm is in the 1.5 mw range. In Toronto, Canada, the city has deposited a 750 kw turbine on the shore of Lake Ontario to serve about 250 homes in a dense urban setting. The town of Hull, Massachusetts, has a 660 kw turbine and plans for adding a second. In North Carolina, Chris Carter, owner of the Solar Village Institute, installed half a dozen residential-scale (2.5 kw) home-power electric systems last year, and in San Francisco, Pfau Architecture is in the final stages of planning department approval for four residential-scale (1 kw) turbines for the Lick-Wilmerding High School it completed last year. In the Netherlands, Core International is test driving Turby, a building-size turbine developed in conjunction with researchers at Delft University specifically to deal with the wind patterns in urban areas.

Wind advocates have stacks of testimonials and studies that refute all the arguments against wind power, with noise, aesthetics, and bird mor-

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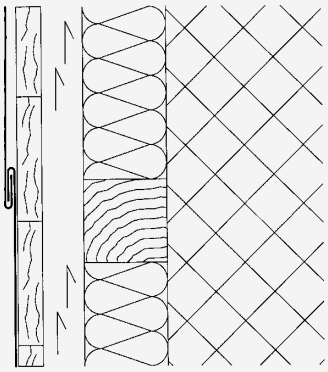




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**Canada's first urban wind turbine was built by a partnership of Toronto Hydro Energy Services and the WindShare Cooperative on December 18, 2002. The turbine stands 30 stories tall and has the capacity to power up to 250 homes. Its 95-foot-long blades capture the wind, turning rotors that produce electricity. Locating wind turbines near the lakeshore allows the blades to capture the best wind production flowing over Lake Ontario with no obstructions. Electricity from the wind yields no emissions, no waste, and is 100 percent green.**



tality rate perceived as the biggest drawbacks. With regard to the bird mortality, Toronto's expert ornithologist predicted, and has been proven correct, that two birds per year would be killed as a result of flying into its turbine on Lake Ontario. The Fatal Light Awareness Project (FLAP), a volunteer group in Canada with affiliate organizations throughout the U.S., cites far greater bird mortality from transmission towers and lines, domestic cats, and especially, lighted high-rise buildings. Turbines are huge, and apparently birds learn to fly around them, unlike well-lighted transmission towers and high-rise buildings, which attract birds.

Turbine noise comes from the blades passing through the air as the hub rotates, or from the gearbox and generator, which are housed in a nacelle mounted on top of the tower and attached to the rotor hub. With the new generation of turbine blade design and material and a well insulated nacelle, the noise is negligible. In Toronto, the turbine generates sound levels of 43 dBa, less than the average noise level in a home (50 dBa), a car running at 40 mph (55 dBa), or general office noise (60 dBa). So, noise is not an issue either.

Today's dilemma is not how to feed power to remote farms, but how to supply ever hungrier, densely populated areas. There is a lot of wind and open space in the middle of the country, but it's a long way from population centers. Distributed generation—putting the power sources near the centers of consumption to reduce transmission distances and costs—is the most efficient arrangement. Plenty of conventional power plants are located near urban areas, but they are not popular neighbors. In spite of a lack of open land and the erratic winds in urban areas, there is a lot of activity in the wind industry to bring pollution-free, renewable sources such as wind power into these areas.

Long Island spreads east from New York City and is just as big a power-hungry place. Sprawl has encroached on the farmlands on the east end, so there isn't a lot of open land for a wind farm. There is, however, a lot of coastline, and it is in the Atlantic Ocean south of Robert Moses State Park that Long Island Power Authority (LIPA) and its 30 collaborating organizations expects to construct a 40-turbine wind farm. The Long Island Offshore Wind Initiative (LIOWI) project has sailed fairly smoothly through rigorous public development and approval processes. It is well on its way to becoming the first offshore wind-energy park in the U.S. (Offshore farms are common in Europe, especially in Denmark, where land is scarce and ocean winds, favored for their unobstructed and consistent nature, are plentiful.) The LIOWI project will have about 40, 2 to 4 mw turbines that will generate enough power for 42,000 homes. A single cable buried 6 feet below the ocean floor will carry electricity from the turbines to a LIPA substation for distribution. Even at 200 feet tall, the turbines will blend into the haze of the horizon when located 2 to 6 miles from shore.

Not offshore, but right onshore, on a peninsula south of Boston, is the turbine in Hull, Massachusetts. Hull claims to have had a wind turbine to run its saltworks in the 1830s, but its first contemporary wind turbine was installed in 1985 and provided at least 30 percent of the power for the local high school until it was damaged beyond repair by a storm in 1996. It was replaced three years ago by a new, improved 660 kw turbine called Hull Wind I that is now three years old and powers traffic signals, streetlights, and on a windy day, 250 houses as well. Hull is now working on bringing in a second, wind-farm-size (1.5 mw) turbine. Farther inland, the town of Princeton, Massachusetts, has the distinction of having the oldest wind-power plant in the state, with eight turbines installed in 1984. In 2002, one of the old 40 kw turbines was replaced with a newer model 50 kw turbine. At 330 kw, it is hardly the scale of the Long Island project, but sufficient for a town with a population of 3,350 people.

You can't find a better example of distributed generation, where production and consumption are in the same place, than energy systems

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**Pfau Architecture is awaiting approval for four turbines for the Lick-Wilmerding High School that the firm completed last year in San Francisco.**

that are integrated into building sites. Chris Carter, who installs solar and wind systems in the Southeast, says the small-wind industry is not growing by the leaps and bounds that large-scale wind is, but that those who do invest, mostly out of conviction rather than for fast payback, become converted to rethinking energy usage in all aspects of their lives. "In home systems, I always install the meter on the kitchen wall. When people see how fast it goes around, they change their habits just as quickly." The technology is also changing quickly. According to Carter, "We use lead-acid batteries, which, although highly recyclable, are extremely heavy. There are new types of batteries on the research horizon at the Department of Energy's National Renewable Energy Laboratories (NREL). They will be made from nontoxic materials like agricultural waste, for example."

Carter has installed residential wind systems made by Wind Turbine Industries, the manufacturers of Jacobs wind turbines, one of the companies that supplied family farms back in the 1930s. The other two major American residential manufacturers are Bergey Windpower and Southwest Windpower, according to principal Dwight Long of Pfau Architecture in San Francisco. Southwest will supply four turbines for the firm's recently completed Lick-Wilmerding High School's technology and design center, located on the western side of the city, where it benefits from unobstructed winds off the Pacific Ocean. According to Long, "The local community has been extremely supportive; they think the addition of the turbines is a positive message for the neighborhood." The turbines are small at 50 feet, in keeping with the neighborhood height limitations, with a modest capacity of 1 kw each. Their function is as much a visible symbol for the school as an offset for electrical costs.

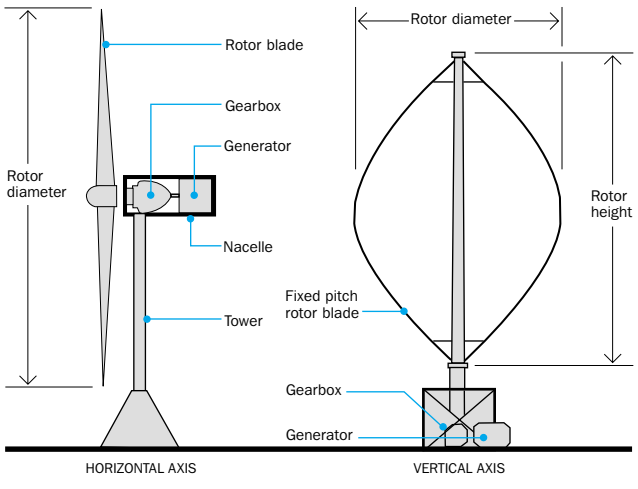
The planning department is reservedly supportive, with expected concerns for height, safety, and noise, all of which have been answered, and approvals are expected shortly. Shepherding wind turbines through local approvals is an ongoing obstacle. Gordian Raacke of Renewable Energy Long Island (RELI), one of the LIOWI partners, has made unification of codes one of his organization's priorities. "Not only are most codes unduly restrictive, the way they vary among small jurisdictions is enough to kill an industry. One of the things we are doing in Long Island is attempting to unify the codes to deal with alternate energy systems uniformly."

Lick-Wilmerding High School is located in a very dense urban environment but has characteristics of open, unobstructed sites. More typical urban settings have lower average wind speeds and complex wind flows that are, in part, a function of the buildings themselves. Right at the surface of a building, velocities may be quite high and direction changes abruptly. Turbines most typically, and all those so far described, are horizontal axis wind turbines (HAWT), in which the axis of rotation is horizontal with respect to the ground and parallel to the wind.

In the Netherlands, a team at the Technical University of Delft has been working on the design and development of Turby, a vertical axis wind turbine (VAWT) specifically for the complexities of urban conditions. In a VAWT, the axis of rotation is vertical with respect to the ground and more or less perpendicular to the wind stream. With a twist, Turby uses the principle of the well-known Darrieus vertical axis turbine. Professor Gerard J.W. van Bussel, one of the developers of Turby, explained another feature: "It was designed to be transported to a building rooftop without the use of a crane. It's a 2.5 kw turbine and weighs 90 kg (198 lbs). The heaviest part is the tower, but it is transportable in sections. You can take it up in an ordinary elevator and plug it in." The tower comes in two sizes, 16 feet (500 lbs) or 24 feet (925 lbs), which fold into sections that are no more than 7.5 feet long. It is currently installed on at least seven rooftops in Delft for final testing of the controls, which, like all contemporary turbines, are sophisticated computers. Although the group has not constructed any examples that integrate the turbine into a building design, another one of the researchers, Sander Martens, Turby's aerodynamic designer, has developed a number of design proposals that show ways it can be done to further take advantage of the higher velocities and particular conditions of wind forces at building surfaces.

The U.S. government is participating in the rapid development of the wind industry, though not nearly as substantially as most proponents say is needed. Tom Gray, deputy executive director of the American Wind Energy Association, the industry's trade organization (www.awea.org), noted the expert research undertaken in the Department of Energy's National Wind Technology Center (NWTC) (www.nrel.gov). The NWTC has set the U.S. goals and provides assistance and information through its Wind Powering America Program. On the other hand, the wind industry enjoys nowhere near the subsidies that fossil-fuel-driven plants do. And help such as the Production Tax Credit, which offers power producers a tax credit, has been allowed to expire three times since it was first enacted in 1992. At the end of 2004, it was extended again. On the individual scale, companies and individuals who produce enough renewable power that they are able to sell their excess back to the grid usually do so at the same rate they pay or, in some instances, at wholesale rates.

It will be interesting to see how wind generation will be incorporated into individual building, beyond the simple addition of a turbine in the back forty. ■




WIND TURBINE CONFIGURATIONS

Source: American Wind Energy Associaton

**Two types of turbines and typical subsystems for electricity generation are shown. The subsystems include a blade or rotor to convert wind energy to rotational shaft energy; a drive train with a gearbox and generator; and a tower that supports the rotor and drive train.**

RENDERING: COURTESY PFAU ARCHITECTURE (TOP);
DIAGRAM: COURTESY THE AMERICAN WIND ENERGY ASSOCIATION (BOTTOM)



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*Mandarin Oriental Hotel*
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*Color: Hemlock Green*
*Profile: Redi-Roof Batten Panel*

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*This nine-story hotel is topped with a striking mansard roof utilizing 20,000 sq. ft. of PAC-CLAD® Redi-Roof Batten panels finished in Hemlock Green. The Mandarin Oriental is part of The Portals, a mixed-use development that is the largest project in the history of Washington, DC. Brennan Beer Gorman Monk Architects designed the luxury hotel in the French style while reflecting the city's iconic neo-classic architecture. The nearly vertical roof installation was done by Progressive Services, Inc., of Dover, PA.*

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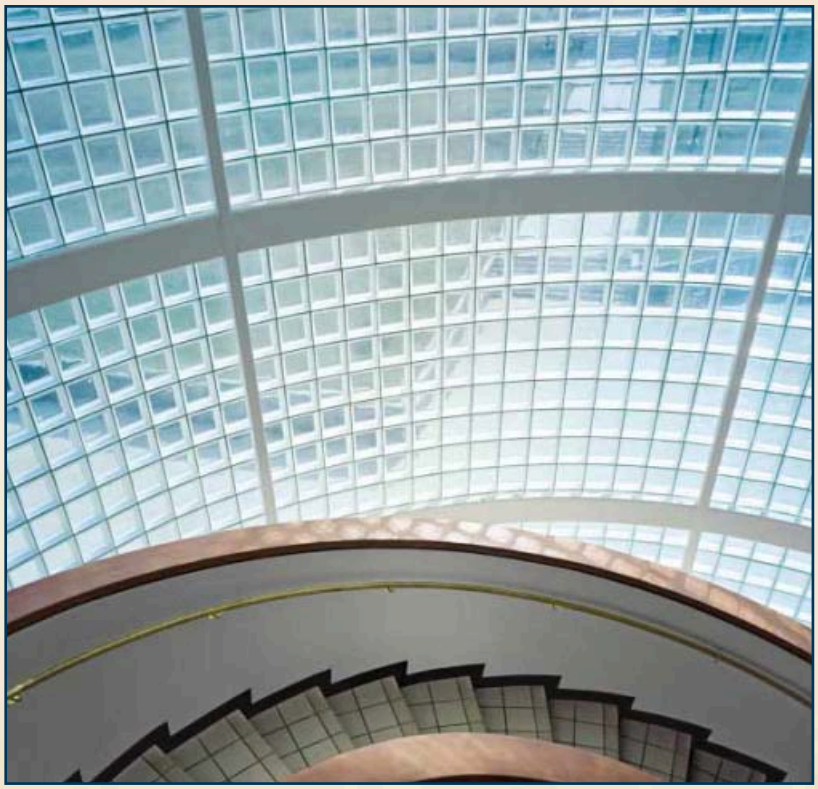
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# Tech Briefs

Projects: A museum for contemporary art contends with a tight site and poor soils • Standards: World's largest building owner poised to spur the adoption of interoperability standards

## In Osaka, an iconic entry and sculpture mark the spot of a mostly underground museum

Commissions for art museums typically focus on form and image, but for the National Museum of Contemporary Art in Osaka, Japan, the design team had to create visual appeal while also addressing an unusual set of challenges in both planning and construction.

Designed by Cesar Pelli & Associates, the 145,000-square-foot building occupies a tight, irregular site on Nakano Island, in the historic heart of Japan's second-largest city. Restrictions imposed by both the national and local governments mandated a structure that was largely underground. This condition meant the architects were doubly challenged: first, to establish a visual identity for the largely invisible institution in a crowded urban landscape; and second, to tackle a complicated below-grade construction process at a site with a high water table and no bedrock.

The design ultimately took the form of a reverse L-shape on three subterranean levels that descend 64 feet into mud and water. To give it street presence, Pelli created a glass enclosure over a ground-floor entrance vestibule, and surmounted it with two dramatically fanciful steel-tube architectural sculptures. The glazed entry could be likened to the tip of an iceberg, or the conning tower of a U-boat—indeed, the firm describes the project as "a watertight submarine for precious artifacts." A graceful steel crown nicely amplifies the glass structure's crystalline panes. The glazed entry also allows light to enter the center of the windowless structure below.

The second challenge was a technical one. The museum sits in an area of saturated alluvial soil. Pelli describes the below-grade structure, which is 10 feet thick, as "a bathtub inside a bathtub inside a bathtub." But rather than holding water, the tubs keep it at bay, resisting what is effectively a lake of aqueous silt and mud. The outermost tub is composed of massive rough-cast solid concrete walls, which keep out water and also act as ballast to resist the uplift of hydrostatic pressure. Inside this tub sits a second layer of concrete with a rubberized membrane that serves to regulate temperature and humidity and acts as a secondary waterstop. The innermost tub, finally, is composed of the interior walls of the museum. Each bathtub layer is separated by an airspace.

The museum required an atypical construction method. Rather than following the usual practice of excavating and lining a huge pit and building from the foundation upward, the museum was constructed from the top down, one floor at a time. This reduced the amount of temporary waterproofing needed by avoiding the large void that typical bottom-up construction requires. Complicating matters, the 100-year flood line sits about 5 feet above street level just outside the museum, meaning it had to be designed to resist yet another form of water pressure. Accordingly, the lower portion of the glass enclosure was constructed with panes that are a beefy 2.5 inches thick.

Descending from the grade-level lobby bridge, patrons first arrive at a public space containing a ticketing and information area, a restaurant, gift shop, auditorium, and video exhibit. This floor also houses administrative offices. The next level down is devoted to temporary exhibitions, and the lowest floor houses the permanent exhibition galleries and curatorial spaces. A long escalator-and-stair run ties the four levels together.





**An intricate steel sculpture spreads its wings above the entry of Osaka's National Museum of Contemporary Art (above). Most of the museum is underground, though the entry adds razzle-dazzle to a dense urban site, especially alongside a nondescript science museum (at right in photo below).**

PHOTOGRAPHY: © JEFF GOLDBERG/ESTO



TLFeBOOK

## Tech Briefs

**Flying on wings of steel**
Aesthetically, the most striking feature of the project is the above-ground sculpture announcing the museum's presence and purpose. The long, horizontal element, densely woven and resembling a roller coaster, wraps around the lobby but also extends beyond it on each side to a length of 230 feet. The tall portion, lighter than the horizontal one, resembles a pair of wings and reaches 170 feet into the sky. These were designed neither on paper nor on a computer; instead, the form was worked out "intuitively, visually, and by a sense of feel," says Pelli's partner Fred Clarke, by building an immense physical model 8 feet long, 4 feet wide, and more than 6 feet high. The firm soldered together large brass tubes to create this "analog" representation of the sculpture. The model was then digitized through photography and profiling with a laser reader.

Initially, Pelli wasn't sure whether the sculpture piece should be vertical or horizontal, so the design team developed both alternatives and presented them to the museum's then-director Shigenobu Kimura.





**The glazed entry (above) boosts the museum's street presence, and also allows light to reach the subterranean floors (left).**





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A visionary client who encouraged inventiveness throughout the project, Kimura liked what he saw and asked Pelli to incorporate both versions.

Detailing and building these structures wasn't simple. The tall wings rise up through the museum's full height, penetrate the panes of the glass enclosure, and then reach up high into the open air. Inherently flexible, they were expected to move several inches under wind and seismic forces. Accordingly, the design team fitted them with special rubber gaskets (to prevent hard contact) and heated collars (to prevent humidity condensation) where they passed through the glass. The titanium-coated, stainless-steel tubes were shop-fabricated and assembled, then disassembled and shipped to the site, where they were finally reassembled and installed. Interestingly, the subcontractor who built the sculpture was not a building-industry firm, but rather a pipeline constructor. Pelli says, "The execution of these sculptures required extremely sophisticated technology. The contractors put their souls into it, and did it very well." *John Pastier*

## GSA asks for guidance on using digital building models for design and construction

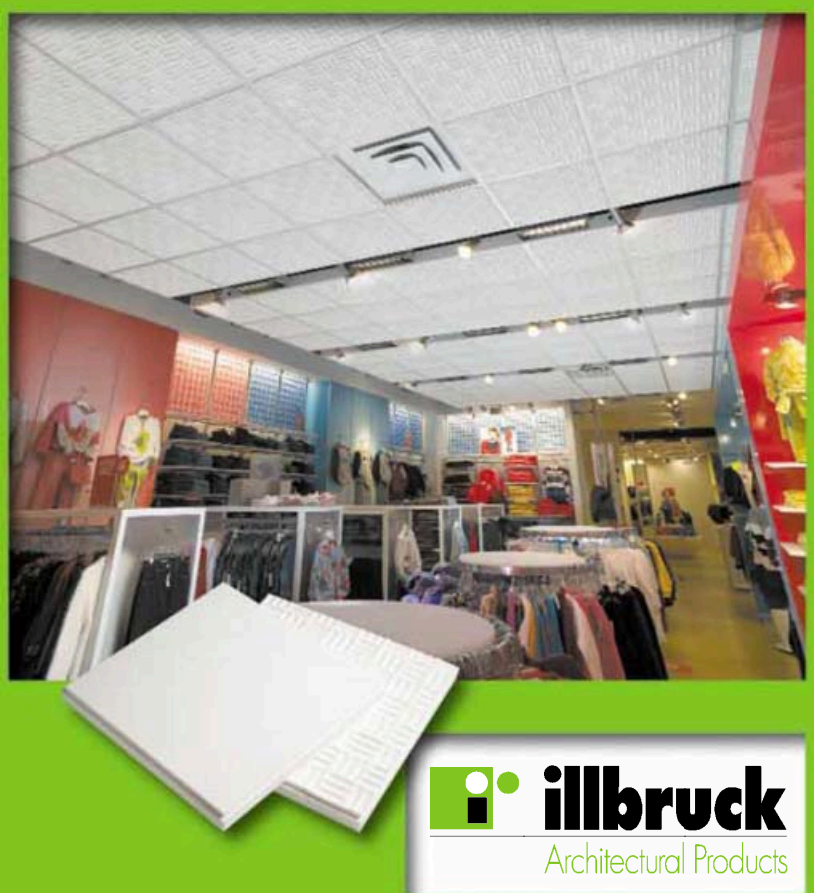
**Proponents of building information modeling (BIM) and software interoperability may soon get a boost from the world's largest building owner. The General Services Administration (GSA) recently solicited the AEC community to provide information about BIM, such as case studies and best practices, with an eye toward improving project delivery and possibly creating new standards for submitting design information to the agency.**

**Specifically, GSA asked for feedback on using Industry Foundation Classes (IFCs), the standards for electronic-data exchange created by the International Alliance for Interoperability (IAI). [Editor's note: RECORD publisher McGraw-Hill was a founding member of IAI and plays an active role in its leadership.] The IFCs are a set of definitions for building elements (e.g., walls, doors, and floors) and their properties and relationships (e.g., doors are built into walls), which were developed to ease the sharing of digital design information among different, proprietary software programs. The IAI, founded in 1995, has long maintained that a lack of data standards lowers the AEC industry's productivity because building information can't be shared easily among multiple parties.**

**GSA's solicitation came on the heels of one of the first studies aimed at quantifying the extent of these productivity losses. Last fall, a report issued by the National Institute of Standards and Technology (NIST) estimated that poor interoperability cost the industry $15.8 billion in 2002.**

**Though some cast doubt on NIST's estimates, and others question the specifics of the IFCs themselves, few doubt the need for better methods for sharing data. So far, the major CAD companies and several other software vendors have pledged, at least in principle, to make their products compatible with IFCs. Overall, though, the industry has been slow to embrace standards, and it seems more likely that owners like GSA would drive their adoption, as has been the case with other technology-based management solutions, such as Internet-based project Web sites.**

**Although the deadline for formal feedback about IFCs has passed, questions and requests for information about the GSA solicitation can be sent to ifc.bim@gsa.gov. *Deborah Snoonian, P.E.***

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# Factors For Achieving Water Conservation Excellence:

## Why—and What—Today's Architect Should Know About Plumbing and Its Relationship to Sustainable Design

Plumbing is one of those areas that architects rarely touched upon except in terms of design influence. Either relegated to the interior designer or engineer for the system specifications, plumbing as a "category" rarely crossed the architect's thought process as a major factor of design importance—until now.

What has changed dramatically is the growing awareness of water itself as a most precious resource, and the one resource most taken for granted. As we collectively grow in our awareness of water's scarcity, the architect finds issues of water as not only part of his decision-making process; his role as "master builder" thrusts him into the center of the efforts to save this resource. Thus, more than in the past, architects must not only familiarize themselves with an increasing variety of issues outside the scope of a building's structure; they must further tackle water's issues and water's relationship to sustainable design.

This article deals with the water resource, water conservation, and the factors that influence an architect's design strategies such as hands-free hygienic plumbing. It will familiarize the architect with the growing possibilities which exist today to conserve this resource, how to gain LEED® points, and how to use LEED calculations to achieve Water Use Reduction requirements. In addition, it will help the architect gain an understanding of the benefits extended to the sustainable design when water conservation is practiced.

### Why the Focus on Water?

While traditionally much attention has been focused on controlling or conserving energy costs, controlling water costs has now become an objective due to growing population and limited fresh water supplies to meet the demand. For example, in the Southwest and the Pacific Northwest, freshwater sources are rapidly diminishing, spawning innovative methods of water conservation and improved management of the natural water-cycle. According to the U.S. Department of Energy, rising water and sewage costs average approximately $4.00 per 1,000 gallons across the United States—a pace expected to be two percent greater than inflation.

From the architect's point of view, these trends impact the entire "green design phenomenon," and ultimately, the design of structures themselves. When the point of view of

### CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Factors For Achieving Water Conservation Excellence: Why—and What—Today's Architect Should Know About Plumbing And Its Relationship to Sustainable Design.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 291, then follow the reporting instructions on page 380 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

#### LEARNING OBJECTIVES

*After reading this article, you should be able to:*

- *Understand the architect's role in water conservation*
- *Recognize what is required to earn points for LEED-NC Water Efficiency Credit 3*
- *Understand how to calculate Baseline and Design Case indoor water consumption*



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preserving our most precious resource is folded into other design considerations, it becomes imperative to know where water is being consumed in different types of buildings. In other words, to create an effective plan that addresses water conservation, the architect's role spills over into water management issues as well as structural issues.

The North Carolina Department of Environment and Natural Resources' Division of Pollution Prevention and Environmental Assistance offers this information about domestic water use: consumption by lavatories, water closets, urinals and showers accounts for the largest amount of consumption for office buildings, schools/universities, hotels/motels and healthcare facilities. Each of these types of buildings consumes more than 40 percent of their total water balance in the restroom. Controlling this consumption should be a high priority of today's architect. As costs for potable water continue to escalate over the next few years—influencing the bottom-line in ways it never has in the past—implementing water-efficient designs that reduce that need will save money and resources in the years to come, and result in a more sustainable structure.



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## Schools

For example, more than 50 million children and six million adults enter public schools each day during the school year. The actual water needed to meet that daily demand is staggering; what makes it more compelling is that the average school building is over 40 years old. In 2003, over $48 billion was spent on construction in this marketplace, and as schools today face a shortage of funding and a lack of awareness of what sustainable designs can do for facilities, the role of the architect is further enhanced by having a unique education-oriented environment within which to practice conservation. Movements toward sustainable schools are well developed in some areas, but many areas still practice old techniques, thus missing the opportunity to impact a large consumer of the domestic water supply.

## Hospital and Healthcare Facilities

Consider the unique requirements of many of our hospitals and healthcare facilities. These buildings are similar to "mission critical" buildings in that they operate 365 days a year, and incorporate equipment that consumes vast quantities of energy and water. In thinking about sustainable design, architects should consider the ASHE (the American Society of Healthcare Engineers) guidance statement from 2002 that focused on the holistic nature of sustainable design: "Local air and water quality is also significantly affected by building design choices. Off-gassing building materials and finishes, construction equipment and HVAC systems directly emit VOCs, particulates and other materials that can result in the formation of ground level ozone (smog), and cause allergic attacks, respiratory problems and other illnesses. Land use and transportation planning, landscape and water management on the grounds and water conservation efforts within the building will influence the amount of toxic emissions released to the water and air throughout the life of the building."

Consequently, it isn't just a "water" decision, but *a building decision* the architect faces when confronting sustainable design with water conservation as a goal. Water-efficient design strategies actually balance water quality and quantity demands within a building. Architects must, therefore, take a "systematic look to identify potential water sources, how water is used in the building and how it flows around the building site to reduce water usage and wastewater discharges"—good advice in today's water-conscious environment.

## Enter LEED®

One of the major forces raising awareness of sustainability and environmentally responsible design is the LEED® Green Building Rating System. LEED has become the most influential driver for green buildings, and includes a section that rewards water conservation efforts. The overall LEED system helps project teams determine environmental goals, identify green design strategies, measure and monitor progress, and document successes.

A product of the United States Green Building Council, LEED for New Construction (LEED-NC) provides a menu of green building measures in six major categories:

- Sustainable Sites, which includes credits for controlling erosion as well as considerations to reduce overall site disturbance.
- Energy and Atmosphere, which includes credits for optimizing energy performance and incorporates credits for use of renewable technologies.
- Materials and Resources, which offers credits for a range of sustainable designing strategies including the use of recycled building materials.
- Indoor Environmental Quality, which includes ways to establish minimum indoor air quality performance and occupant comfort and health.
- Water Efficiency, which includes ways to maximize water efficiency both in outside irrigation as well as indoor water usage.
- Innovation and Design Process, which addresses design measures not covered in the other five categories.

For the Water Efficiency category, the U.S. Green Building Council offers up to five LEED-NC credits: two for reducing potable water use for irrigation; one for reducing potable water use for sewage conveyance; and two for reducing potable water use inside a building. The last two credits, which comprise LEED-NC Water Efficiency Credit 3, are dedicated to reducing potable water use within the building.

## Using LEED for Water Conservation

The architect must consider methods to reduce potable water use that go beyond the Energy Policy Act of 1992 (EPAct). Such methods include reusing roof runoff for non-potable applications, installing sensors and flow restrictors on water fixtures, installing dry fixtures, and other innovative methods. Such methods have a profound effect on the environment, and include:



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- Environment. Water reduction benefits the total amount withdrawn from rivers, streams and other water bodies. In addition, such reductions reduce energy use and chemical inputs at municipal water treatment facilities. Conserving water can also minimize the frequency of outflow events (in a combined sewage system, raw sewage is discharged when the system breeches capacity).
- Economic. Water reductions minimize building operating costs, and lead to a more stable tax and water rate, as well as delaying water treatment facility expansions.
- Community. Water reductions save water for future generations. In addition, water reduction allows the community to grow without overburdening its water system.

The architect's design strategy should include all water consuming fixtures, equipment, and seasonal conditions related to the structure, as well as specifying fixtures that exceed the Energy Policy Act of 1992. These include waterfree urinals, low-consumption toilets such as pressure-assist 0.8 gallons per flush (gpf) models, low-flow faucets and showers, and electronic Flushometers and faucets.

For example, waterfree urinals are now readily available in the marketplace and use no water for flushing. In certain applications, these fixtures represent ideal solutions to achieve water conservation goals. In other applications, toilets that use less than 1.6 gpf offer the architect extraordinary opportunities to achieve sustainable objectives (e.g., 0.8 gpf pressure assist).

## Making Your Calculations

The intent of the Water Use Reduction section of LEED-NC is to maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems. Architects achieve this by employing strategies that in aggregate use 20% or 30% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.

To meet Water Efficiency Credit 3.1, the architect must submit the following:

- The LEED Letter Template, signed by the MEP engineer or responsible party (including the architect) declaring the project uses 20% less water than the baseline fixture performance requirements of the Energy Act of 1992; and,
- The spreadsheet calculations demonstrating that water-consuming fixtures specified for the occupancy and use of the building reduces occupancy-based potable water consumption by 20% compared to the baseline conditions.



*Low-consumption 0.8 gpf pressure-assist toilets maximize water delivery force to provide excellent performance often out-performing gravity 1.6 gallon units.*

To meet Credit 3.2, requirements are the same as above, except instead of 20%, it is a 30% reduction. These could be considered "affordable credits," in that the cost of water-efficient equipment is on par with standard fixture expenses.

One can immediately see the importance of *establishing a baseline calculation* in order to fulfill these requirements. The baseline calculation will be the same as the water conservation *design calculations* (those used to show LEED qualification), except that for the baseline, ALL fixtures are assumed to be performing according to Chart 1 (1992 Energy Act).

**Chart 1: Fixture Flow Requirement Ratings of Energy Policy Act of 1992**

| Fixture | Flow Req. |
|---|---|
| Water Closets | 1.6 gpf |
| Urinals | 1.0 gpf |
| Showerheads | 2.5 gpm |
| Faucets | 2.5 gpm |
| Replacement Aerators | 2.5 gpm |
| Metering Faucets | 0.25 gal/CY |

NOTE: Flowing water pressure of 80 psi

To better understand the calculation methodology, let's assume a one-story building, with two restrooms. The men's room has two urinals, and two closets. The women's restroom has four closets. Each restroom has two sinks with a manual faucet on each sink. There are 100 people who occupy the building during office hours: 50 men, and 50 women.



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*Stain-, chemical- and heat-resistant solid-surface lavatory systems with low-consumption sensor-operated faucets are easy to maintain and provide hands-free, hygienic operation.*

## Creating the Baseline

Create a spreadsheet listing each water-using fixture, and the frequency of use data. Frequency of use data includes number of female and male daily uses, duration of use, and the water volume use. There is no set criteria for determining daily use or duration of use, so architects can estimate these items based on the project's program requirements. These values are used to calculate the TOTAL POTABLE WATER used for each fixture type and gender. Use EPAct fixture flow rates for the baseline case. Do not change the number of building occupants, work days or frequency data from baseline to design case. In addition, graywater or rainwater harvest volumes must not be included in baseline calculations.

The baseline calculations offered in this example show the architect an easy way to accomplish the LEED-NC objective of preparing a baseline, and ultimately, the objectives of the LEED-NC credit for Water Use Reduction. For example, LEED-NC v2.1, which is the basis of this approach, requires submittal of the LEED letter templates, which calculate, based on the occupancy of males, females and fixture type, the TOTAL ANNUAL POTABLE WATER VOLUME for the building. In this calculation, the baseline yields a total usage of 157,950 gallons (Chart 2).

Note that we have estimated the daily use and duration of use for each fixture in this building. LEED-NC specifically states that these criteria are not set; therefore, the architect is required to set them, and usage patterns can be determined in many ways (e.g., working with the owner, talking with occupants, etc.).

## Calculating the Design Case

In calculating the Design Case (the specific changes being proposed to this building from a water conservation point of view), we must *not* change the number of building occupants, the number of work days, or the frequency data.

For our Design Case, let's assume the following:

1) Waterfree urinals will be used.
2) 0.8 gpf pressure-assist water closets will be used.
3) Electronic faucets with low-flow aerators (0.5 gpm) will be used. Plus, the electronics have been factored as reducing sink duration by 20% (to 12 seconds). However, electronic controls on water closets do not receive a reduction in duration, as they are fixed-volume devices (e.g., 0.8 gpf). NOTE: The 20% reduction can be found on page 105 of Reference Guide LEED-NC v2.1. Furthermore, university studies have been conducted into water savings of electronic versus manual faucets.

The calculations shown in Chart 3 use the above fixture types. You can see that a 69% reduction in annual water use for the building is achieved—far greater than the 30% reduction required for this LEED-NC credit. In fact, Water Efficiency Credits 3.1 and 3.2 are cumulatively achieved.

**CHART 2: BASELINE CALCULATIONS**

| Daily Uses | Fixture Type | Duration (flushes); faucets shown in minutes | Flowrate (gpf); faucets shown in gpm | Water Use (gallons) |
|---|---|---|---|---|
| 50 | Men's Water Closets | 1 | 1.6 | 80.00 |
| 150 | Women's Water Closets | 1 | 1.6 | 240.00 |
| 100 | Men's Urinals | 1 | 1.0 | 100.00 |
| 300 | Conventional Sinks | 0.25 | 2.5 | 187.50 |
| | Daily Total | | | 607.50 |
| | Annual Work Days | | | 260 |
| | Total Annual Volume (gallons) | | | 157,950 |

Assumptions: Males use urinals twice per day; closets once per day; females use closets three times per day. Both males and females use faucets three times per day.

**CHART 3: DESIGN CASE CALCULATIONS**

| Daily Uses | Fixture Type | Duration (flushes); faucets shown in minutes | Flowrate (gpf); faucets shown in gpm | Water Use (gallons) |
|---|---|---|---|---|
| 50 | Men's Water Closets (ultra low flow) | 1 | 0.8 | 40.00 |
| 150 | Women's Water Closets (ultra low flow) | 1 | 0.8 | 120.00 |
| 100 | Men's Urinals (water free) | 1 | - | - |
| 300 | Conventional Sinks | 0.2 | 0.5 | 30.00 |
| | Daily Total | | | 190.00 |
| | Annual Work Days | | | 260 |
| | Total Annual Volume (gallons) | | | 49,400 |

Assumptions: Males use urinals twice per day; closets once per day; females use closets three times per day. Both males and females use faucets three times per day.



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The architect is in a position to do "what if" scenarios using these simple calculations, with usage factors taken into consideration. It is always helpful, as well, to consult with manufacturers who have such usage data, and who can provide LEED assistance.

## Real Results from LEED

The fact is, water efficiency measures in commercial buildings can easily reduce water usage by 30% or more, according to the USGBC. In a typical 100,000-square-foot office building, low-flow fixtures coupled with sensors and automatic controls can save a minimum of one million gallons of water per year, based on 650 building occupants each using an average of 20 gallons per day. As demonstrated in the example above, the standard toilet fixture uses 1.6 gpf and the standard urinal consumes 1.0 gpf. Design strategies using equipment such as 0.5-gpf urinals, as well as waterfree urinals or dual-flush toilets, can significantly impact usage and maximize water savings. All of these should be included in the architect's conservation strategy.




*Dual-Flush toilets allow the user to select a full flush (1.6 gallons per flush) or reduced flush (average 0.8 - 1.1 gallons per flush).*

Taking conservation further, showers installed for those who commute by bicycle or for others who work out during lunch, can be fitted with low-flow 2.0-gallons-per-minute (gpm) showerheads and sensor-operated lavatory faucets with 0.5-gpm aerators, providing maximum water savings. Or, for example, in universities and schools, where efficient transportation is combined with sports activities, such shower strategies can deliver significant dividends in water savings.

To attain the highest possible LEED-NC rating, all water-consuming fixtures should be selected for their capacity to conserve water and provide durability for long-lasting service. The more a product can maintain the habits of a population while conserving energy, the more a product will be accepted by the population itself. In general, products that conserve without sacrificing performance will be in greater demand than those that give up performance in favor of efficiency. For example, low-flow pressure toilets and 0.5-gpf urinals reduce water consumption without sacrificing performance.

Measures taken to achieve Water Efficiency objectives can overlap into other LEED-NC categories. Knowing the products and understanding the intent of the LEED-NC criteria can maximize point-earning potential. For example, low-flow 0.5 gpf urinals contribute to achieving water efficiency goals. Additionally, the urinal Flushometer may be manufactured from recycled content, and the fixture may be regionally manufactured.



*Low-consumption solid brass showerheads with self-cleaning, spring-loaded spray disks produce a cone-within-a-cone spray pattern.*

## Retrofit Applications

As more building owners are now choosing to reinvest in existing structures, plumbing retrofits are becoming more common and attractive to allow for accessibility, provide increased hygiene, and decrease water consumption. This reinvestment trend has led to the development of LEED standards for existing buildings to document the higher levels of efficiency and address the operation and upgrades of existing buildings that do not fall under the category of major renovation.

LEED for Existing Buildings (LEED-EB) provides architects the opportunity to market their services to owners and operators of all existing buildings by explaining the financial and environmental benefits of sustainable facilities. LEED-EB covers a significant market with more than 4.6 million buildings in the United States already standing and billions of square feet of existing space that would benefit from the green design approach.

For these existing buildings, one of the first elements to examine to earn LEED points is the restroom, specifically, flushing technologies. The advantage of retrofitting old Flushometers is that products have vastly improved in terms of water efficiency over the past few decades. There have been advancements in electronic products, whereby the solenoid, which initiates the flushing sequence, is isolated from the water source for more reliable operation. There are also generational improvements to sensor technology, which can now identify users more consistently, ensuring a single flush per use instead of multiple flush, which wastes water. Sensor products meet the intent of sustainable design, in that they provide a hygienic hands-free bathroom environment, lessening cross-contamination and spread of germs in the workspace.

While older Flushometers can use more than three gallons a flush, waterfree urinals, which connect directly to existing drain lines for simple retrofit applications, consume no water to maximize conservation efforts without sacrificing hygiene. Waterfree urinals use a liquid-seal to form a barrier between the open air and urine, which prevents any odors from escaping from the drain line. Independent research studies have shown waterfree urinals have less bacteria per square inch than standard water-fed urinals, providing a hygienic and odor-free environment.

Other retrofit options include upgrades of manual units into touchless models with kits that flush electronically. Both side-mounted and integral top-load modules are available and provide the same advantages of new, touchless products that are "right out of the box."



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## The Hygiene Benefit

When evaluating water conservation strategies, the architect should consider factors such as the type of facility and the number of people who will have access to specific restrooms. One important benefit from sensor technology is hygiene, which directly affects the building in terms of tenant satisfaction and occupancy rates. Often, hygiene is considered separately instead of a by-product of product specification. In actuality, they are related.




*Electronic soap dispenser and faucet units promote water conservation and hygiene.*

Touchless, sensor-operated fixtures, for example, are the best solution to providing a hygienic atmosphere in healthcare and educational facilities because plumbing fixtures operate in damp environments, which are prime breeding grounds for bacteria. As pointed out, LEED allows for a 20% reduction in lavatory and sink use durations when sensor controls are installed. It also helps meet the intent of the Indoor Environmental Quality (IEQ) section of LEED-NC, which seeks to protect building occupants from harmful environmental conditions, and improve comfort and well being. Certainly, preventing the spread of germs by using sensor controls helps to promote hygiene and all of hygiene's subsequent benefits (more productivity, fewer sick days, etc.).

The Centers for Disease Control and Prevention (CDC) reports that hand washing is the single most important means of preventing the spread of germs. It is the first line of defense for infectious diseases, including respiratory infections and gastrointestinal disorders, among others. In fact, after using a public restroom, a single hand can have a bacteria population of 200 million, according to the CDC. Nevertheless, it takes just seconds to re-contaminate after washing by touching dirty faucets, soap dispensers and then finally, towel dispensers—something the general public is increasingly aware of now.



*Stainless steel wash stations with an adjustable above- or below-deck thermostatic mix valve allow for hygienic, low-consumption operation with minimal maintenance.*

The use of touchless faucets is so important (and logical) to ensuring a hygienic atmosphere that it is the single design specification for scrub sinks for operating rooms, according to the Association of PeriOperative Registered Nurses (AORN), the leader and expert on patient safety in surgical settings. "In general, there is only one specific feature we recommend for surgical scrub sinks: that it allows hands-free operation," says Ramona Conner, RN, MSN, CNOR.

Sensor-operated faucets also increase hygiene in public and semi-private restrooms, such as in hospital rooms. That's because the dirtiest area in the bathroom, as far as germs are concerned, is the sink itself. A research study on public restrooms titled *"Enteric Bacterial Contamination of Public Restrooms"* showed that total coliforms (aerobic bacteria found in the colon or feces) were present on 17.3% of the 248 surface samples taken from hospitals. Sink drain surfaces resulted in positive samples of coliforms 80% of the time, followed by the rim of the sink 20% and then the area under the soap dispenser 10%. The reason for this is that when a person washes, bacteria are shed from the hands and collect in the sink area.

There is also a conservation advantage for sensor-operated plumbing fixtures that save a significant amount of water. Based on the assumption that both manual and sensor-operated faucets flow 2.2 gpm, and users follow the minimum Food and Drug Administration's Food Code hand washing procedure that recommends pre-rinsing for 4 seconds, scrubbing for 20 and then finishing with a final rinse of 4 seconds, sensor-operated faucets would save 1.057 gallons of water per hand washing. This savings is realized because sensor-operated faucets are "turned off" unless a user's hands are in the "active area," while manual faucets continue to flow while users lather their hands. These savings can add up even further with faucets that use 0.5 gpm aerators.

The final step to hygienic hand washing is drying, but again, touching contaminated surfaces to retrieve towels can negate the effects. That's why touchless, forced-air dryers are ideal for maintaining highest levels of hand hygiene. In fact, research by the Mayo Clinic (Effects of 4 Hand-Drying Methods for Removing Bacteria From Washed Hands: A Randomized Trial, *Mayo Clinic Proceedings.* 2000; 75:705-708) states that warm air drying ranks the highest (best) when compared with other methods of drying when bacterial samples were taken after drying hands. The clinical trial declared "the forced warm air method as the best method for removing bacteria from the washed hand."

In fact, additional water waste can be accounted for in applications with manual faucets because water may continue to run when the user reaches for a towel to dry their hands or use the towel as a buffer between hand and fixture to turn off the faucet and avoid re-contamination. Also, because users are now accustomed to sensor-operated faucets, manual faucets are often left running out of habit.




*Advanced electronic hand dryers dry hands in 10 to 15 seconds and use 80% less energy than traditional hand dryers while providing a 90% savings vs. paper towel costs.*



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## Conclusions

Architects have a variety of tools at their disposal to achieve water conservation objectives. In a recent survey of building owners and managers, participants were asked which areas of the building they thought had the greatest potential to negatively affect a visitor's impression of their facility if not properly maintained or updated. The second most cited area was the restroom. In fact, restrooms were judged the most frequently visited common area of the building by employees and/or visitors alike.

It makes good design sense to take advantage of new strategies that promote water conservation because they benefit both the bottom line and the environment. In fact, owners of LEED-certified buildings receive financial incentives in terms of return on investment. In October 2003, California's Sustainable Building Task Force released a 134-page report titled, "The Costs and Financial Benefits of Green Buildings," which confirms the economic viability of "green buildings" as an investment. The report states, that on average, a normal increase in up-front costs of two percent to achieve "green design" will result in life cycle savings of 20 percent of the total investment—10 times the initial investment.

Today's architect has the opportunity to take water conservation to the next level—and help their owner-customers achieve realistic results. ■

## The Promise of Dual Flush

A recent development that holds promise of water conservation is Dual-Flush technology. Dual-Flush toilets allow the user to select a full flush (1.6 gallons per flush) or reduced flush (average 0.8 - 1.1 gallons per flush). Australia is the second driest continent on Earth, and a country where the need for water conservation is understood throughout the population. It has been using the product for years, having mandated Dual-Flush technology in all residential applications, which has greatly impacted the demand on local water supplies.

The latest information on its performance and acceptance is a pilot program conducted in Canada using Dual-Flush toilet technology in residential, commercial, and institutional settings. The Canadian study, conducted by Canada Mortgage and Housing Corporation in partnership with 12 municipalities, monitored water consumption, toilet performance, and customer satisfaction with the Dual-Flush system. The Dual-Flush performed well based on water consumption rates, saving an average of approximately 26% percent more water than standard 1.6 gpf fixtures.

Until now, Dual-Flush was only available in residential "tank" style fixtures. Many designers have been so eager, they've actually used these fixtures in a commercial application. Recently, a new Dual-Flush Flushometer was introduced which will bring the advantages of Dual-Flush to a wider range of commercial projects. Related to LEED, the product will count towards water use reduction credits and help a design team get the points for water efficiency. The new Dual-Flush Flushometer will effectively reduce water use on the toilet by an average of 26% according to the Canadian study. A well performing 1.6 gpf fixture is recommended for use with the new Dual-Flush Flushometer—the product is also available as an easy retrofit to existing fixtures making the water reductions available to older projects.

## List Of Works Consulted

"Guideline for Hand Hygiene in Health-Care Settings: Recommendations of the Healthcare Infection Control Practices Advisory Committee and the HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force," Centers for Disease Control and Prevention, MMWR 2002; 51 (No. RR-16).

National Center for Health Statistics. Vital statistics of the United States. 119th ed. Washington: U.S. Census Bureau. Statistical abstract of the United States; 1999

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"Comparative surface-to-hand and fingertip-to-mouth transfer efficiency of gram-positive bacteria, gram-negative bacteria and phage," Journal of Applied Microbiology, Oct. 2002, Vol. 93, No. 4, pp. 585-592.

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## AIA/ARCHITECTURAL RECORD **CONTINUING EDUCATION** Series

### LEARNING OBJECTIVES

- *Understand the architect's role in water conservation*
- *Recognize what is required to earn points for LEED-NC Water Efficiency Credit 3*
- *Understand how to calculate Baseline and Design Case indoor water consumption*

### INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 380. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

### QUESTIONS

**1.** What section of LEED-NC is designed to maximize water conservation within a building?
- **a.** Sustainable Sites
- **b.** Material Resources
- **c.** Water Efficiency
- **d.** Energy and Atmosphere

**2.** What policy is used to determine a building's baseline potable water volume usage?
- **a.** ASHRAE/IESNA 90.1-1999
- **b.** EPA's Guidance Specifying Management Measures for Sources of Non-Point Pollution in Coastal Waters (EPA 840-B-92-002 1 93)
- **c.** EPAct 1992
- **d.** ASHRAE 62-1999

**3.** If you reduce the indoor water use by 30%, how many LEED points would you receive?
- **a.** 1
- **b.** 2
- **c.** 3
- **d.** 4

**4.** What is one of the documents that must be submitted to achieve LEED-NC Water Efficiency Credit 3.1?
- **a.** LEED letter template declaring 20% signed by MEP engineers or responsible party
- **b.** LEED letter template declaring 30% signed by MEP engineers or responsible party
- **c.** Installation instructions signed by MEP engineers or responsible party
- **d.** Ownership Verification signed by MEP engineers or responsible party

**5.** What is the fixture flow requirement of a urinal to meet baseline performance?
- **a.** 3.5 gpf
- **b.** 1.6 gpf
- **c.** 1. 0 gpf
- **d.** 0.5 gpf

**6.** What must be included in your baseline potable water calculation?
- **a.** graywater volumes
- **b.** recycled water volumes
- **c.** harvested rainwater volumes
- **d.** each fixture using water volumes

**7.** When making Design Case calculations, which of the following can be changed?
- **a.** number of building occupants
- **b.** the number of workdays
- **c.** the type of fixture
- **d.** the frequency data

**8.** In the baseline calculations stated in the article, if the number of male occupants increased by 10%, which fixture' (s') water use totals would be affected?
- **a.** Men's water closets
- **b.** Men's conventional sinks
- **c.** Men's urinals
- **d.** All of the above

**9.** In determining the Frequency of use data, which of the following should you exclude from consideration?
- **a.** number of female and male daily uses
- **b.** duration of use
- **c.** the water volume use
- **d.** structure of the facility

**10.** What is the total annual potable water volume (gallons) of a one-story building in the example provided in the article for the Design Case, if the number of men increased to 75, and the number of women decreased to 25?
- **a.** 86,060 gallons
- **b.** 39,000 gallons
- **c.** 78,260 gallons
- **d.** 37,840 gallons

## About Sloan

Sloan Valve Company is a single source of water-conserving plumbing systems for construction professionals across the globe. Along with its flagship Flushometer products, Sloan manufactures sensor-operated and manually activated faucets, sink lavatory systems, electronic soap dispensers, touchless hand dryers, waterfree urinal fixtures and pressure-assist flushing systems.

Recognizing a void for quality plumbing products outside the restroom, Sloan also established itself as a leading manufacturer of surgical scrub stations, showerheads and computerized plumbing control systems that regulate water use in defined locations and at specified times.

With a comprehensive line of products, Sloan remains the leading manufacturer of "green" plumbing solutions to the world market. For more information, contact Jim Allen at: Sloan Valve Company, 10500 Seymour Avenue, Franklin Park, IL 60131, www.sloanvalve.com, 800-9-VALVE-9, 800-982-5839, jallen@sloanvalve.com.

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**PELLA WINDOWS PRESENTS**

# Greater Vision:
# Alternate Window Materials in Commercial Buildings

Windows are more than a view between worlds. They offer protection and comfort, and with the right combination of materials windows can increase energy efficiency, enhance daylighting, improve occupant comfort, and provide low maintenance for the building owner. The right window selection also can offer a balance between design, performance and budget when first and long-term costs are considered.

This continuing education program examines factors that influence window selection. It focuses on six key criteria: aesthetics, price, energy efficiency, durability, maintenance and environmental impact. Through comparisons of available materials and selected case studies this unit is intended to help architects and specifiers improve their ability to advise clients on the best window solution for their projects. It will show the options available for window styles and materials for commercial and institutional buildings.

## Glass Options

Window assemblies consist of framing, glazing systems, hardware, finishes, sealants, and weather stripping. The first consideration is glass and glazing options. This is a key in calculating long-term cost because of its affect on energy efficiency and building operating expense.

Design requirements, the size of the window openings, thermal performance, cost, sound transmission, maintenance, durability, shading options, weather conditions and local requirements all have a bearing on selection of the glazing system.

In commercial structures, the two most commonly chosen systems are sealed insulating glass and dual glazed systems.

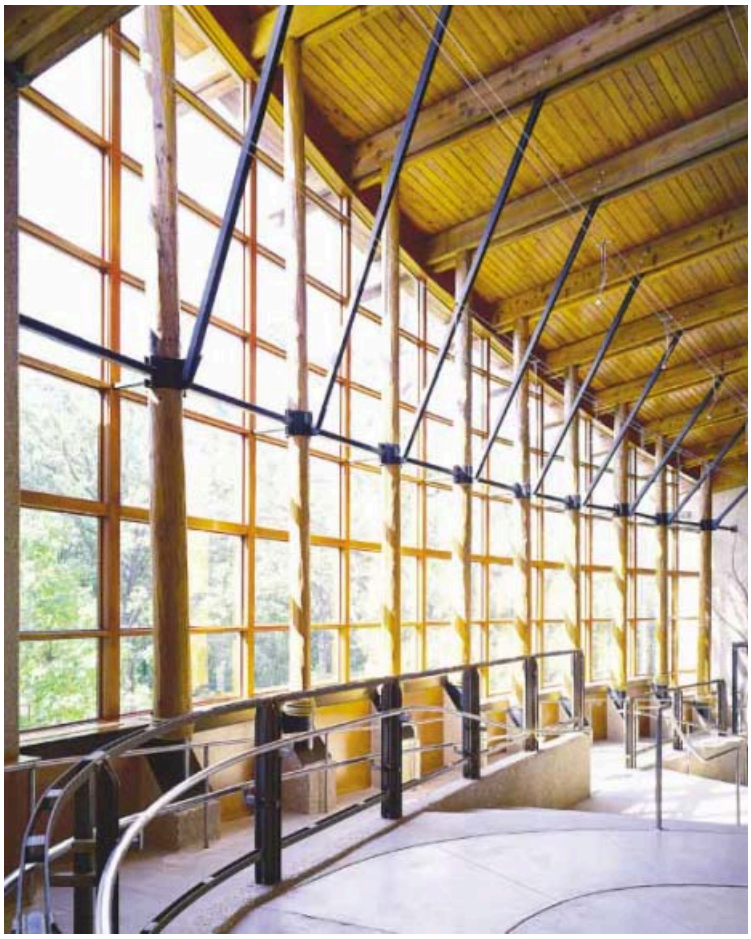
### CONTINUING EDUCATION

The following learning objectives will help you focus your study as you read **Greater Vision: Alternate Window Materials in Commercial Buildings**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 297, then follow the reporting instructions on page 381 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

#### LEARNING OBJECTIVES

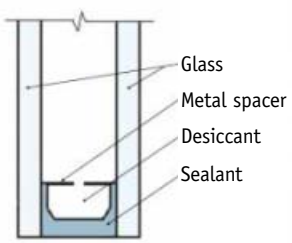
*After reading this article, you should be able to:*

- *Understand window selection criteria and its impact on your projects and clients;*
- *Identify primary advantages and disadvantages of different window framing materials in commercial buildings;*
- *List and compare the advantages and disadvantages of sealed insulating glass and dual glazed systems; and*
- *Establish a method to determine the most appropriate window system for future projects.*

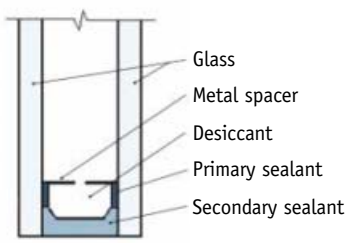


*Wood-framed glazing complements the beautiful view of the woodlands at Lakeside Nature Center, Kansas City, MO, by International Architects Atelier.*

Sealed insulating glass consists of two glass panes separated by a perimeter spacer typically made of metal. The sealed space between the panes may be filled with an inert gas like argon to improve the U-value of the insulating glass unit (IGU). In a single-seal system the primary sealant is applied behind the spacer. In a double-seal system, the primary sealant seals the spacer to the glass on both sides, and the secondary sealant, which is applied behind the spacer, provides the structural characteristics needed to hold the unit together. In both cases the sealant minimizes the potential for moisture intrusion and gas loss. However, when the seal in insulating glass fails, moisture appears on the internal surfaces, impairing vision through the glass and permanently damaging the insulating glass, which then must be replaced at a significant cost to the owner. Single-seal sealant systems often carry a five-year warranty against seal failure whereas double-seal systems typically come with a ten- to twenty-year warranty.




Single-seal Insulating Glass
Source: Pella Corporation




Double-seal Insulating Glass
Source: Pella Corporation



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*Wayland Union Middle School, Wayland, MI, by Design Plus, Inc., shows how dual glazing with between-the-glass window treatments reduces maintenance.*

Dual glazing comprises two single glass panes set individually into a window frame of aluminum or wood. (Vinyl and fiberglass frames do not typically offer a dual glazing option.) Dual glazing relies on a gasket and vent system design to keep moisture out of the air space and from forming on internal glass surfaces. The space between panes of glass can vary in size to hold blinds or other shading devices and to buffer outside sound, temperature changes and wind. In most cases dual glazing systems offer a life cycle cost advantage over windows with sealed insulating glass since they are not subject to the seal failure commonly associated with insulating glass systems.

The table below shows a comparison of sealed insulating glass and dual glazing—at a quick glance, both offer similar advantages in terms of aesthetics, cost, and thermal performance. However, the IGU accommodates a wider range of fenestration types and larger glass sizes, while dual glazing offers a longer life, easier re-glazing, between-glass options, less sound transmission, and better thermal performance when between-glass blinds are included.

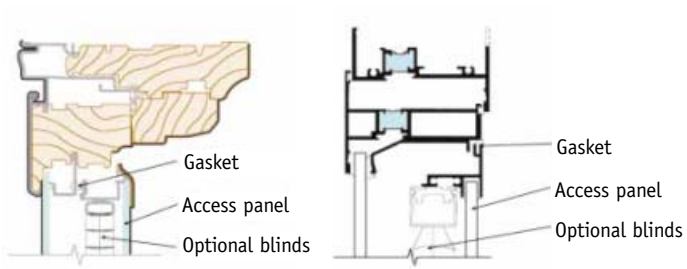
**Comparison of Dual Glazing and Insulating Glass based on Selection Criteria**

| Glazing System Selection Criteria | Dual Glazing | Insulating Glass |
|---|---|---|
| Fenestration Type | | + |
| Glass Size | | + |
| Longevity | + | |
| Re-glazing | + | |
| Between-glass Options | + | |
| Thermal Performance | = | = |
| Thermal Performance with blinds | + | |
| Cost | = | = |
| Aesthetics | = | = |
| Sound Transmission | + | |

Both dual glazing and insulating glass units can accommodate between-glass options such as blinds and muntins. In a dual glazing system the interior glass panel is typically designed as an access panel, allowing blinds/shades to be serviced for maintenance/repair. However, when the blinds in an insulating glass unit break, the entire piece of insulating glass requires replacement.

When blinds are excluded, the difference in cost between a window with insulating glass and one with dual glazing is negligible. The initial price of a between-glass blind is slightly higher than a room-side blind of similar quality. However, between-glass blinds do not have the future life-cycle costs associated with room-side blinds (i.e. cleaning and replacement due to damage).

When comparing insulating glass to dual glazing, the only differing acoustic factor is the air space between the panes of glass. The larger air space associated with dual glazing results in less sound transmission through the window and a sound transmission class (STC) rating at least 15% better, with additional improvements in STC as the air space increases.




Examples of Wood and Aluminum Windows with Dual Glazing
Source: Pella Corporation

When sealed insulating glass is broken, the entire unit must be replaced. However, with the large air space between the panes in a dual-glazed window, it is uncommon for both to be broken simultaneously. When the exterior pane is broken, the interior pane remains intact and provides protection or vice versa.

**Thermal Performance of Insulating Glass and Dual Glazing**

| Glass Type | Visible light transmission | Ultraviolet light transmission | Solar heat gain coefficient | U-value of total unit |
|---|---|---|---|---|
| **Clear insulating glass** | 81 % | 56 % | 0.76 | 0.54 |
| **Clear dual glazing** | 81 % | 56 % | 0.76 | 0.50 |

The above table shows clear dual glazing offers a better total window U-value than clear insulating glass while all other values are the same. When closed blinds are added to the window, dual glazing with between-the-glass blinds offers an 18% improvement in total window U-value and a 43% improvement in solar heat gain coefficient (SHGC) over a window with room-side blinds.

In addition to using layers of glazing and controlling the properties of the spaces between them, the Web site www.efficientwindows.org suggests improving the energy performance of glazing products by changing the chemical composition or physical characteristics of the glazing material by adding a tint or by applying a low-emittance (Low-E) coating to the glazing material surface to reduce heat gain and glare.

## Framing Materials

The next consideration is window frame material. The window frame must do several things. It should provide strength to withstand wind and other loads, drainage for water and accommodate weather



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stripping, glazing channels and rabbets, weep holes, internal gutters, screw bosses, concealed fasteners, flashings, drips, corner keys, thermal breaks, hardware, and frame accessories.

Properties of the framing material affect the thickness and weight of each window. A suitable material can be chosen from four available options: wood, aluminum, vinyl and fiberglass. Each one has properties that make it more appropriate for certain applications.

Wood is one of the oldest building materials and has been the traditional frame material in all types of buildings primarily because it has been consistently and readily available and can be milled into many shapes to fit simple or complex designs. Wood-framed windows also can have an exterior cladding of vinyl or aluminum to increase weather-resistance while retaining an attractive wood finish on the interior.

Aluminum is a popular window frame material appreciated for its light weight and durability, but it has the disadvantage of high thermal conductance. This nonferrous metal is made from bauxite and cryolite and can be extruded into simple or complex frames. It is available in a variety of anodized and painted finishes. Aluminum is considered mostly for commercial and institutional use and when manufactured with a high percentage of recycled content adds value in green building.

Vinyl (also known as polyvinyl chloride or PVC) is newer than wood or aluminum as a window frame material and is derived from fossil fuels. It offers good insulating values and has good moisture resistance. Some recent advances have improved dimensional stability and resistance to degradation from sunlight and temperature extremes. Vinyl is considered a residential material and because PVC formulations for windows are not consistent throughout the industry, quality and performance can vary.

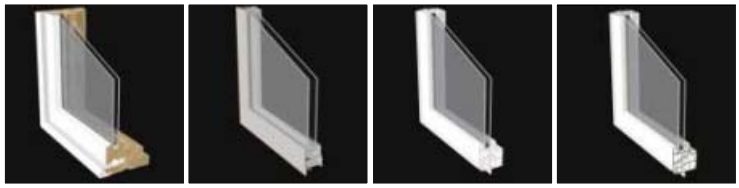
As window framing material, fiberglass (glass-fiber-reinforced polyester) is an emerging product. Fiberglass framing products were developed in the 1990s and currently are used in less than 2% of today's market. Fiberglass is a composite that can be pultruded into lineal forms. Because the material is stronger than vinyl, it can have smaller cross-sectional shapes and thus less area. It provides exceptional thermal stability, strength, and durability.

## The Selection Process

Four window types are commonly used in commercial structures: double-hung, casement, fixed and awning. A double-hung window consists of two sashes operating in a rectangular frame with upper and lower halves able to slide up and down. A casement window swings open on side hinges. A fixed window has no operating sashes, and an awning window is similar to casement, but the sash is hinged at the top and always swings out.

*Aluminum-clad wood windows offer high thermal performance and unified appearance at Rochester Hills Public Library, Rochester Hills, MI, by TMP Associates, Inc.*





*Aluminum-clad wood* | *Aluminum with thermal break* | *Vinyl* | *Fiberglass*

*Source: www.efficientwindows.org*

**How Window Materials Meet Selection Criteria**

| | Wood | Aluminum | Vinyl | Fiberglass |
|---|---|---|---|---|
| **Aesthetics** | Warm, natural beauty; many finish options | Many finish options | Limited color options | Many color options |
| **Energy Efficiency** | Natural insulator | Natural conductor | Good insulator | Good insulator |
| **Environmental Impact** | Very low embodied energy; can be recycled | High embodied energy; can be recycled | Medium embodied energy; not recyclable | Low embodied energy; limited recyclability |
| **Price** | Medium to high first cost; low long-term cost | Medium to high first cost; low long-term cost | Low first cost; higher long-term cost | Low first cost; low long-term cost |
| **Durability** | High | High; but potential for thermal break failure | Low; cracks easily | High |
| **Maintenance** | Interior wood surfaces may need refinishing; scratches can be repaired | Low; not scratch resistant | Low; may require early window replacement | Low; high scratch and dent resistance |

## Aesthetics

The choice of materials is influenced by the architect's perspective and the project design intent. Several things must be considered: scale and proportion, sightlines, relationship to other interior finishes, frame profiles, and glass types. Hardware and location of window treatments (room side or between-glass blinds) also influence the choice of frame material.

Of the four framing materials, wood is unique because it allows different finishes for the interior and exterior and provides a warmth and natural beauty not offered by the other materials.

Aluminum offers a broad selection of anodized and painted finishes that typically are the same on both sides. Aluminum can be combined with wood in an aluminum clad wood frame that offers the warmth and natural beauty of wood on the interior and the durability of aluminum on the exterior.

Vinyl framing offers few color choices and has the same finish on both sides. Medium to dark colors are especially limited. Some manufacturers offer surface treatments such as laminates or other coating options to increase color selection and surface appearance.

Fiberglass has high design flexibility with many color options. The material is typically painted the same color on both sides but offers the potential for different colors on the exterior and interior.

## Energy Efficiency

The energy efficiency of the windows has a significant impact on the overall annual operating costs of a building. To obtain the best energy efficiency from a window three factors must be evaluated: thermal performance, condensation resistance and occupant comfort. Additionally, because installation can affect window



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*Wood windows optimize design performance and budget flexibility at the F.M. Kirby Shakespeare Theatre, Drew University, Madison, NJ, by Ford Farewell Mills and Gatsch, Architects*

performance, the manufacturer's installation instructions should be evaluated and followed for optimum performance.

To compare thermal performance look at the R-values and U-values. The R-value measures resistance of glazing material or fenestration assembly to heat flow. Materials with higher R-values have higher resistance to heat flow and are better insulators. The U-value measures the rate of non-solar heat loss or gain through a material and may be expressed for the glass alone or the entire window including frame and spacer material. The lower the U-factor, the greater a window's resistance to heat flow and the better its insulating value.

Choice of materials has a bearing on both these factors. For example, in Chapter 30 of the 2001 *ASHRAE Fundamentals Handbook*, the addition of a thermal break in an aluminum frame improves the U-value from 1.92 to 1.13. An aluminum-clad wood frame further improves the frame U-value from 1.13 to 0.51.

The handbook also indicates that total Unit U-values for the entire window include both the frame and glass. The range for aluminum windows with thermal breaks is from 0.35 (triple glazing with low-E coatings) to 0.64 (double glazing with clear glass). For aluminum-clad wood windows the range is from 0.25 (triple glazing with low-E coatings) to 0.53 (double glazing with clear glass). The glass is the same so the difference in U-values is a result of changing frame material.

The National Fenestration Rating Council (NFRC) is a reliable source for determining window energy properties and comparing products. NFRC rates window units for U-factor, SHGC, visible light transmittance (VT), and air leakage (AL).

Another factor that affects window thermal performance is air infiltration. Air leakage heat loss and gain occur by infiltration through cracks in the window assembly. This is indicated by an AL rating expressed as the equivalent cubic feet of air passing through a square foot of window area. The lower the AL, the less air will pass through cracks in the window assembly. Select windows with an AL rating of 0.30 cfm/sq ft or less.

Resistance to condensation also is important. Condensation on window frames can damage interior windowsills, finishes and eventually walls and floors. Specifying products and design conditions that regulate surface temperatures and moisture in the air will minimize potential for condensation.

Materials with greater resistance to condensation also provide greater comfort to occupants seated near windows, and occupant comfort has a direct impact on worker productivity.

Wood is considered the best performer from a thermal point of view. It is a natural insulator with excellent resistance to condensation and a high degree of thermal comfort.

Aluminum is a natural conductor and therefore has poor energy efficiency and low resistance to condensation. Aluminum's R-value is minimal and raises the overall U-factor of a window unit. In cold climates, an aluminum frame can become cold enough to condense moisture or frost on the inside surfaces.

A desirable combination for thermal performance and comfort is an aluminum-clad wood window. This alleviates differences in exterior and interior frame temperatures, offering resistance to condensation, greater thermal comfort and lower annual energy costs than thermally-broken aluminum windows.

The average annual savings from the use of aluminum-clad wood windows is fairly consistent across the United States: 27% to 31% compared to single-glazed aluminum windows without thermal breaks; 6% to 9% compared to thermally-broken aluminum windows.

Vinyl has the same thermal efficiency as wood and in terms of thermal performance vinyl frames are comparable with wood. However, vinyl's expansion and contraction encourages air and water infiltration which increases maintenance and damage issues.

Fiberglass offers thermal efficiency similar to wood and the lowest expansion and contraction rates of all four materials. Less expansion ensures a consistent bond between sash and glass and reduced energy costs as well as less stress on joints for greater durability.

### Environmental Impact of Materials

The choice of windows can add value to a structure and the environment. The most commonly used evaluator of a structure's environmental impact is the U.S. Green Building Council's LEED® (Leadership in Energy and Environmental Design) Green Building Rating System. This guide for designing, constructing, operating, and certifying buildings is based on accepted energy and environmental principles.

LEED's measurement standard follows a point system. The four levels of LEED certification and required points for each are:

| | |
|---|---|
| Certified | 26 - 32 points |
| Silver | 33 - 38 points |
| Gold | 39 - 51 points |
| Platinum | 52+ points (69 possible) |

The points are earned within six categories. The five environmental categories (not including Innovation and Design Process) are divided into credits. One or more points are available within each credit, and points are achieved by meeting specified requirements.

- Sustainable Sites: 8 credits, 14 points
- Water Efficiency: 3 credits, 5 points
- Energy and Atmosphere: 6 credits, 17 points
- Materials and Resources: 7 credits, 13 points
- Indoor Environmental Quality: 8 credits, 15 points
- Innovation: 4 points



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**CLICK FOR ADDITIONAL REQUIRED READING**
**The article continues online at:**
**archrecord.construction.com/resources/conteduc/archives/0505pella-1.asp**
To receive AIA/CES credit, you are required to read this additional text. For a faxed copy of the material, call Pella at 1-800-84-PELLA.
The following quiz questions include information from this material.

## AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

### LEARNING OBJECTIVES

- *Understand window selection criteria and its impact on your projects and clients;*
- *Identify primary advantages and disadvantages of different window framing materials in commercial buildings;*
- *List and compare the advantages and disadvantages of sealed insulating glass and dual glazed systems; and*
- *Establish a method to determine the most appropriate window system for future projects.*

### QUESTIONS

1. Which of the following has the greatest affect on energy efficiency and building operating costs?
   a. Window size
   b. Glass selection
   c. Frame material
   d. Window covering
2. The most commonly chosen systems for commercial structures are sealed insulating glass and dual glazed systems. The difference in first cost between these systems is minimal.
   a. True
   b. False
3. In most cases, which glazing system offers a life cycle cost advantage?
   a. Dual glazing
   b. Sealed insulating glass
4. Of the four window frame materials, which one has the highest thermal conductance and embodied energy?
   a. Wood
   b. Aluminum
   c. Vinyl
   d. Fiberglass
5. Which of the four window frame materials has the lowest thermal conductance and embodied energy?
   a. Wood
   b. Aluminum
   c. Vinyl
   d. Fiberglass

### INSTRUCTIONS

Refer to the learning objectives. Complete the questions below. Go to the self-report form on page 381. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

6. What measures can be taken to maximize the energy performance of windows?
   a. using layers of glazing
   b. specifying between-the-glass blinds in lieu of room-side blinds
   c. applying a low-E coating to the glazing material surface
   d. using wood or fiberglass frames
   e. all of the above
7. What framing system is rated as having the least environmental impact?
   a. Wood
   b. Aluminum
   c. Aluminum clad-wood
   d. Vinyl
   e. Fiberglass
8. Material with higher R-values has less resistance to heat flow and is a better insulator.
   a. True
   b. False
9. If the glass remains the same, a change in the frame material can improve the U-value for the entire window?
   a. True
   b. False
10. In which of the LEED environmental categories can windows not earn points?
    a. Sustainable Sites: 8 credits, 14 points
    b. Water Efficiency: 3 credits, 5 points
    c. Energy and Atmosphere: 6 credits, 17 points
    d. Materials and Resources: 7 credits, 13 points
    e. Indoor Environmental Quality: 8 credits, 15 points

## About Pella

Pella Corporation is a world leader in the manufacturing of premium windows and doors. Long-recognized in the window industry for its technology and innovation, the company holds more than 100 U.S. product and design patents.

Registered with the American Institute of Architects as a Continuing Education System provider since 1995, Pella is committed to developing quality learning activities in accordance with AIA/CES and Health/Safety/Welfare (HSW) criteria. Pella offers several continuing education programs through www.pellacommercial.com in addition to this partnership with *Architectural Record*.

Pella also awards scholarships to top students at leading universities and schools of architecture. Please contact your local Pella architectural consultant for more information about these programs.

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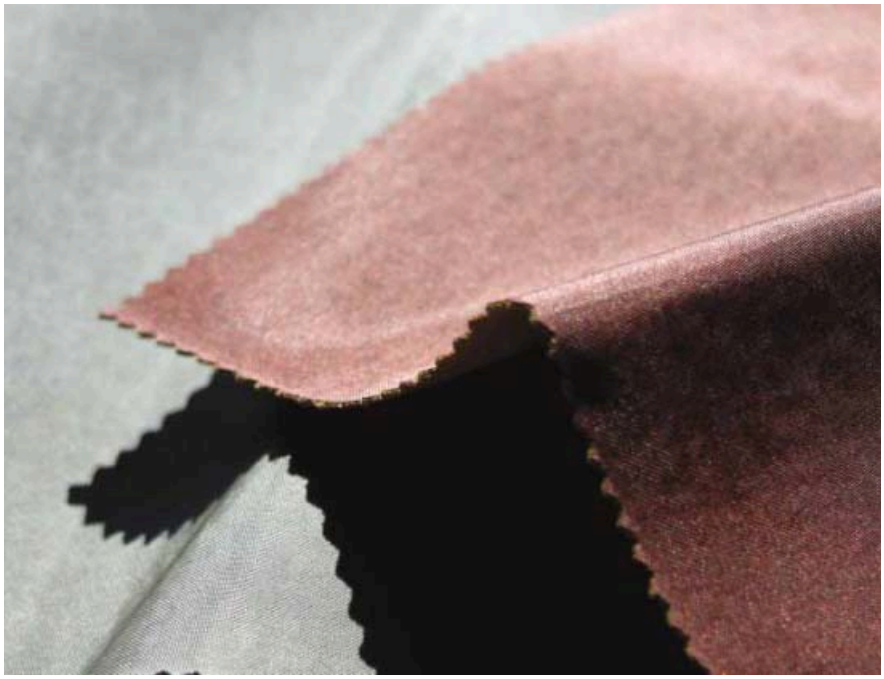
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SWEETS PRESENTS

# The Art of Product Research and Selection



Performance characteristics are important product evaluation criteria. (Photo: RTKL)

*Design is not making beauty, beauty emerges from selection, affinities, integration, love.*

Louis I. Kahn, FAIA, (1901-1974), 1971 AIA Gold Medalist

*You've got to bumble forward into the unknown.*

Frank Gehry, FAIA, 1999 AIA Gold Medalist

By Barbara A. Nadel, FAIA

In recent years, cultural trends, technology, innovation and discovery have inspired the creation of hundreds of new materials and products, which, when combined, provide design solutions for problems that didn't exist a generation ago. The vast array of new and existing building products and emerging technologies reflects the dilemma facing design professionals who must research and choose elements integral to project aesthetics, functions and budgets.

Two 21st century concerns, sustainability and security, are increasingly important design criteria for owners. Sustainability has heightened awareness among design professionals, manufacturers, clients, and the building industry about the opportunities for exciting new products and materials to meet Leadership in Environmental and Energy Design (LEED) standards. From tax credits, to enlightened owners seeking to be environmentally responsible, sustainable products and best practices are more prevalent in all building types. Similarly, in the post 9/11 era, the standard of care is still evolving for security design. New and existing buildings must be able to address the lessons learned from 9/11, through security-driven life safety codes, industry standards, and durable, new products designed to withstand blasts and natural forces, especially in civic buildings, and other high risk targets.

Keeping current on these developments, and many others, is essential for design professionals at every level of experience and job title. New products, materials and ideas emerge constantly, while older, or less successful models are discontinued with little fanfare. The task for design professionals is to identify what they need, sift through what's out there, study past and anticipated performance, and learn to evaluate what they are looking at to ensure that the products selected and specified are appropriate for each project application.

Specification writers work with manufacturers constantly, and their job ensures that they remain on top of the industry. But for seasoned design professionals with years of experience, as project managers, designers, and technical coordinators, many of the materials and methods they learned about in school have often been superseded by new, emerging technologies and products, making their job even more challenging. Younger professionals are comfortable surfing the Internet for product information, but to be most effective in their searches, they must be open to embracing a variety of print resources, multimedia and professional activities. That is perhaps the most important message for educators to convey to students, since today's hot new material may be obsolete in four years.

*Barbara A. Nadel, FAIA is principal of Barbara Nadel Architect, in New York City, and writes frequently about design and technology.*

## CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **The Art of Product Research and Selection.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 303, then follow the reporting instructions on page 382 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

### LEARNING OBJECTIVES

*After reading this article, you should be able to:*

- *Explore methods and best practices on the art of product research and selection.*
- *Analyze product evaluation criteria used by established architectural firms and seasoned design professionals when specifying products.*
- *Understand information typically required for approval of product substitutions on projects*
- *Review the types of product information generally required during various project phases.*



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Clients and owners are increasingly design and budget conscious, especially in an era of limited resources among many public and private sector organizations. Large organizations with ongoing capital programs may have a palette of preferred products and vendors, making the search process easier and faster. Savvy facility managers and in-house design professionals may take a pro-active, hands-on approach to product evaluation and selection ("here are the brands we find acceptable") or they may be open to new ideas ("let's see what you find to be aesthetic and reliable"). Government agencies generally require three specified products (or ask for equals), potentially tripling the amount of research needed for every major item.

Design consultants should remain aware of the degree of involvement clients wish to maintain during product research and selection, to ensure that project needs are met. Client involvement may vary when dealing with highly visible design elements, such as building envelope and window systems, to the hidden, more functional components that keep their facilities operational, such as insulation systems.

Everyone loves to investigate new and exciting marketplace innovations, but few brave souls want to be the first to use them in projects, due to the lack of historical performance data and the inherent risk of potential liability for owners and design professionals.

Collectively, all of these factors converge to make the art of product research more sophisticated than ever before, and more critical to overall project success. This article will explore best practices on the art of product research and selection by examining how design professionals go about finding information. Various methods will be discussed, along with product evaluation techniques, and networking opportunities used by large, medium and small firms. For brevity, the term "product" will apply to building industry materials, coatings, furnishings, finishes and equipment, unless noted.

## Process Not Product

Many architects learn about addressing "process, not product" during their design training. Essentially, the methodology of seeking information and problem solving is the most important part of the journey leading to a design solution. Asking good questions, exploring alternatives and developing options are vital steps. Large organizations with strong purchasing power may have the ear of the industry and get involved with product development, while small to mid-sized firms may work harder on finding design information to in order to maintain their edge.



*Lighting in SOM's material library is color corrected and can be manipulated to simulate proposed project lighting. The library is located to allow natural light, fluorescent and incandescent lighting into the space, so any combination is possible. (Photo: Skidmore, Owings and Merrill)*

| PRODUCT INFORMATION RESOURCES | PEOPLE RESOURCES FOR PRODUCT INFORMATION |
|---|---|
| Catalogues, especially comprehensive multi-volume industry references | Architects |
| CD-ROM disks from manufacturers | Building owners and landlords |
| Focus groups | Clients |
| Internet – manufacturer websites and emails | Colleagues |
| Mailings | Consultants |
| Manufacturer brochures | Contractors, construction managers |
| Networking | Engineers |
| Office library | Facility managers |
| Professional organizations | Government agency personnel |
| Publications: books, magazines, newspapers, newsletters | Interior designers |
| Seminars | Landscape architects |
| Showrooms | Manufacturers |
| Site visits | Sales representatives |
| Trade shows and conventions | Specifications writers |
| Travel | Suppliers |

## How Large Organizations Approach the Discovery Process

Large firms, public agencies, and in-house facility managers with high dollar volumes of work often approach product research and selection differently than small to mid sized organizations. Firms specializing in project types, such as education, historic preservation, or office interiors, for example, may have longstanding relationships with industry representatives. With greater purchasing power and opportunities, many major manufacturers routinely seek out large organizations to show them new products and developments in the pipeline. Sometimes they will invite designers to participate in focus groups. These trusted relationships provide design professionals with more choices to share with clients, and allow them to work directly with manufacturers to customize and develop new products for specific needs. Large organizations often devote significant resources and personnel to product research.

Herbert Lynn, AIA, Associate Partner, and Director of Research and Specifications for Skidmore, Owings and Merrill, New York City, works on every project in the office. During conceptual phases, designers go to the staffed materials and catalogue libraries, containing samples from every manufacturer in the world, to see what may be useful. Binders contain samples, agency approvals, New York City-approved testing methods, and where a material is installed in New York City. The materials library lighting is color corrected and located to allow natural light, fluorescent and incandescent lighting into the space, to simulate proposed conditions.

The New York-based SOM Lab, a firmwide clearinghouse for design concepts, researches product performance, and new, innovative materials and systems from around the world. If a question arises regarding titanium, for example, the Lab accumulates information and sends inquiries to SOM offices on the internal intranet, while searching for related materials.

Searches include contacting architects, manufacturers and fabricators in Europe, if need be, to find information. Topics evolve based on project need, such as curtain wall, point supported glass, metal and green roofs. Information is reviewed by the firm's Technical



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Group, which establishes product evaluation criteria, such as codes, liability, durability, past product history and location. Findings are posted on the office intranet for internal distribution.

"We balance innovative research against potential liability risks. We review constructability and budgets, and will speak with engineers, and research and development groups, not just local sales representatives. Hard copy data, printed catalogues, PDF files, and CAD details are very useful," says Lynn.

Once products are selected, meetings are held with manufacturers and fabricators. During the project concept phase, sample palettes are developed, and codes reviewed. For example, using glass calls for preliminary energy calculations, percentage of allowable glass, and products applied to previous projects. Documentation lists products used for each project, citing finishes, manufacturer, and location, and is available to team members. During the construction documents phase, the project team knows what is being used and where. An in-house committee organizes over 60 luncheon seminars annually, with product sales representatives.



*A well-stocked material library, with catalogues and samples, is an essential tool during early project design phases.*
*(Photo: Skidmore, Owings and Merrill)*

### Substitution Requirements

Occasionally, product substitutions must be made due to cost, availability, or contractor request. Understanding that product substitutions can have a dramatic effect on a building project, SOM maintains rigid criteria for considering substitutions, to ensure that steps are taken to verify that a proposed substitution is valid. Each substitution request is internally reviewed by SOM, and requires extensive documentation by the contractor or subcontractor. Minimum standards apply, and additional information may be required for submission, depending on the type of product or system evaluated. The contractor or subcontractor must submit the following to substantiate the substitution:

1. Product data, including drawings, fabrication, and installation procedures.
2. Samples, where samples of the specified products are requested.
3. A detailed comparison of significant qualities of the proposed substitution with those of the material or work specified. Significant qualities may include elements such as size, weight, durability, performance, visual effect, code compliance, maintenance requirements, energy usage, and environmental considerations.
4. Coordination information, including a list of changes or modifications made necessary to other parts of the work, including the work of other trades that will become necessary to accommodate the proposed substitution.
5. A statement indicating the substitution's effect on the contractor's construction schedule, indicating the effect of the proposed substitution on overall contract time.
6. A cost comparison between the product specified and the requested substitution, including a proposal of the net change, if any, in the contract sum.

### Liability

Product liability is always on the minds of design professionals throughout a project. The standard of care within the profession is a benchmark used to determine what other architects are doing. Related factors include how long a product has been in the marketplace, how well it performs, and any problems that have occurred elsewhere. New products, materials and systems may not have any history, leaving the due diligence and research to the architect.

### Innovation

SOM's Director of Strategic Innovation works with several major manufacturers to develop new products for use in projects and in the marketplace, including carpet and ceiling tiles, insulation and wall panels. In these cases, the firm identified a need, and worked with manufacturers to create new products.

### Interiors

"Web searching is only one component of the discovery process. We supplement our print library with manufacturers' websites for updates, CAD details and photos, for drawings and presentations," says Dale A. Greenwald, Interior Design Director, Cannon Design, New York City. Other techniques include focus groups, publications, and trade shows, which provide exposure to a lot of information in a short amount of time, along with a chance to make comparisons. Monthly staff meetings cover discussion about new or interesting products. The staff compiles a database of favorite products, sorted by category. Greenwald's interiors group typically investigates solid surfaces, wood, stone, laminates, flooring, coatings, lighting, and textiles. Evaluation criteria are applied for each product, as follows:

1. Performance characteristics
2. Testing methodologies and results
3. Installations (local and largest)
4. Warranties
5. References (client, installer, contractor)
6. Sustainability
7. Availability – lead times, install times
8. Installer Recognition – familiarity or training
9. Cost (comparatively to other similar products or materials)
10. Advantages and Disadvantages



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*Color selection generally occurs after products and materials have been evaluated and chosen. (Photo: RTKL)*

Designer Robert Berry, AIA, LEED AP, Principal, RTKL, Baltimore, Maryland weighs novelty versus performance when searching for new materials and products. For a Baltimore office building lobby, Berry was searching for something different to address a design issue. He stumbled upon a sample in the firm's interiors library and wanted more information. The paint finish on the metal sample was a technique developed locally, without a history of other applications. He visited the local shop, where the owner was reluctant to share details of his proprietary process. Berry and his specifications writer carefully evaluated the technique, and reviewed many samples before specifying the process.

An advantage for many large firms, especially those specializing in a few building types, is the established relationships they have with many companies and suppliers, which reduces the need for constant product research. "These companies are always in the office, doing luncheon seminars, sharing what's in the pipeline, so we know where the market is going. Using search engines at the outset has become second nature, but construction industry search engines and paper catalogues provide a full collection of information, in addition to a substantial office material and product library. Bookmarking favorite sites saves time. We use PDFs constantly, especially photos of materials, because they are easy to print, file, add to the project binder, and use in presentations. We document what we use, and where, for future reference," Berry says.

RTKL does a lot of international work, which means more due diligence when checking out local fabricators, products and company histories to determine what is cost effective and best for the client. Typically, the firm works with a local architect during design development, and both firms select materials to achieve a desired look. In one instance, Berry specified granite for an office building in Poland, and wanted to work with local suppliers and distributors. He sent U.S. samples to the client and local architect, and flew to Poland to find a close match that would meet performance criteria, quality and aesthetics. "We set the direction of the material palette early on, and remained open minded. The choices may be different abroad, but as long as everyone understood cost and value, we were usually able to match materials without a problem," says Berry.

### Materials Resource

"We have our antennae up for new products and manufacturers all the time. If we see something we like, we track it down, online and through other research. New products with blast coverage in magazine ads get our attention," says Margaret Helfand, FAIA, principal of Helfand Architecture PC, in New York City. Her 10-person design-oriented practice relies on remaining aware of and finding fresh concepts and materials. Helfand's office belongs to a subscription-only New York City-based materials resource library and website that enables designers to review unusual new products at their convenience. The showroom serves as an industry connection among designers and manufacturers who want to reach small and medium sized firms. Members make an appointment, and can review samples, technical information, and product profiles. Large firms with high volume work generally maintain an extensive in-house materials library and don't have a need for an outside service.

Helfand has found several sustainable products at the showroom, such as a "bio-based" composite material created from sunflower seed hulls, an abundant agricultural fiber. The material exhibits the natural qualities of traditional burled woods, making it an environmental and economical alternative to hardwood. She used this material as a bumper guard in a college project. "One of our evaluation criteria was the ability to withstand high impact. The material is homogeneous, like birds-eye maple on steroids. When it chips, more of the same material is exposed, and it is able to sustain impact," says Helfand.

"The product library is our 'high altar,' a focal point for the office. We approach each project as an art form, inventing new design elements and features, by customizing standard systems and products. Samples are sorted in bins by Construction Specifications Institute (CSI) category. We have samples in active use, those from past projects, and those we love and want to use. When researching materials, we might find something we like and will find a way to use in future projects. When new samples arrive, we look at them, and add them to our computer database, to track contact information and manufacturers. During early project phases, from concept design, feasibility studies and schematics, we consider major materials. Budgets, materials and outline specifications begin immediately. Early on, we identify appropriate materials that are visually exciting and durable. If we need resilient flooring or special glass, for example, we go through the samples and see the manufacturer names," she adds.

For an urban school expansion project, where blending a historic building with the street was important, Helfand wanted a lead coated copper wall material with a granite base. A sheet metal book, calls to vendors, finding details online, and intensive investigation by various search methods enabled the project team to locate the needed information. During the construction documents phase, the team continues to work with manufacturers and vendors for obtaining technical data.

Building product sales representatives are an important link between manufacturers and design professionals. The firm librarian charged with maintaining catalogues and sample libraries can research with manufacturers, saving time for designers. This process can greatly influence determining whether products meet project criteria, leading to specification.

An eclectic approach to finding products on the Internet invariably leads to various sources, says project manager John Tinmouth, of Helfand Architecture. He often begins with a general or building industry search engine to find more established products, and supplements his search with architectural trade magazines and design-oriented websites. Tinmouth, like others in his office, enjoys showroom visits to see products that are not generally commercially available. At least one consultant he knows in New York works with sales representatives from different manufacturers to collect new products and share them with design firms seeking fresh, unique approaches. ■



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**The article continues online at:**
**archrecord.construction.com/resources/conteduc/archives/0505sweets-1.asp**
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The following quiz questions include information from this material.

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### LEARNING OBJECTIVES

- *Explore methods and best practices on the art of product research and selection.*
- *Analyze product evaluation criteria used by established architectural firms and seasoned design professionals when specifying products.*
- *Understand information typically required for approval of product substitutions on projects*
- *Review the types of product information generally required during various project phases.*

### INSTRUCTIONS

Refer to the learning objectives above. Complete the questions above. Go to the self-report form on page 382. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

### QUESTIONS

**1.** All of the following are effective resources for design professionals to obtain product information except which?
- **a.** Print catalogues
- **b.** Manufacturer websites
- **c.** Construction industry search engines
- **d.** Billboards
- **e.** Seminars

**2.** According to design professionals, all but which of the following are advantages of using electronic files in PDF format for product research?
- **a.** Ease of access from the Internet
- **b.** Useful for developing client presentations
- **c.** Appropriate for sharing product information within the office and project team
- **d.** Contain technical information, such as sizes, strength, flame ratings
- **e.** Provide videos of product performance

**3.** Key factors influencing whether or not a design professional will specify a new product or manufacturer on the market are:
- **a.** Extensive availability of colors and finishes
- **b.** Risk of potential liability
- **c.** Ease of installation
- **d.** Extent of available historical performance data
- **e.** All of the above

**4.** During the schematic design and design development phases, typical product information required by design professionals includes all but which?
- **a.** Construction details
- **b.** Availability
- **c.** Shop drawings
- **d.** Sustainability applications
- **e.** Performance criteria

**5.** When a contractor requests a product substitution, what information is generally not required for the architect's review, in order to approve the substitution?
- **a.** Fabrication drawings
- **b.** Installation procedures
- **c.** Magazine advertisements showing the proposed product
- **d.** Detailed comparison of the cost and qualities of the proposed substitution and the item specified.
- **e.** Samples of the proposed product

**6.** Product research techniques often vary between large firms, and small to mid-sized firms. Reasons include:
- **a.** Major manufacturers seek out large firms to keep them apprised of new developments
- **b.** Large firms generally have more extensive in-house materials libraries
- **c.** Smaller firms are more likely to use outside services to assist in finding new products
- **d.** All of the above.

**7.** Product selection evaluation criteria during early design stages of a project generally includes all but which of the following:
- **a.** Color selection
- **b.** Durability
- **c.** Performance history
- **d.** Sustainability
- **e.** Advantages and disadvantages

**8.** All of the following kinds of lighting in materials and samples libraries are appropriate to simulate typical lighting conditions within various building types except which?
- **a.** Natural daylight
- **b.** High pressure sodium
- **c.** Fluorescent
- **d.** Incandescent

**9.** Searching the Internet for product information has advantages and disadvantages. Some disadvantages from web searches include:
- **a.** Many irrelevant websites come up
- **b.** False paths when looking for a certain product type
- **c.** Colors on the computer screen are not an exact match to samples
- **d.** Up to 80 to 90 percent of time spent searching the Internet is unproductive
- **e.** All of the above.

**10.** Facility managers at large government agencies and organizations are most concerned about which of the following product evaluation criteria:
- **a.** Manufacturer's track record on repair, replacement, troubleshooting and service calls
- **b.** How often a product is used in a 24-hour cycle
- **c.** Life cycle costing
- **d.** Rigorous performance criteria and field testing
- **e.** All of the above.

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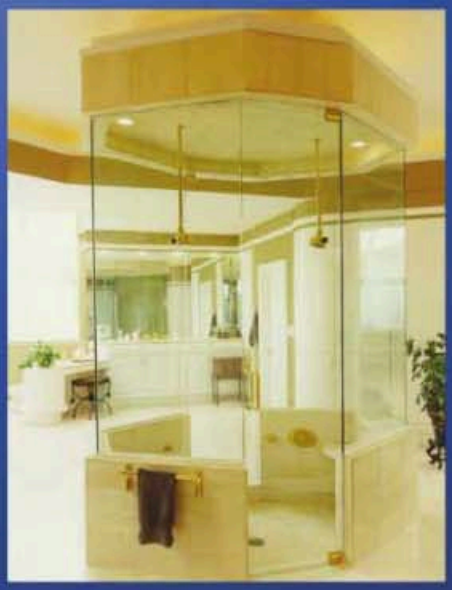
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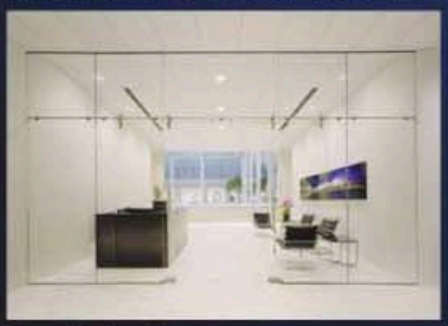
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# Lighting

## Architectural illumination allows the interior landscapes of three hospitality projects to blossom

### BRIEFS

**Sponsored by the American Society of Interior Designers**, InformeDesign has released a new issue of the monthly newsletter *Implications* that **delves into daylighting**. Each issue of the publication explores one major subject in relation to design and human behavior. This edition, authored by Michael Kroelinger, AIA, professor and director of the School of Architecture at the University of Nevada, Las Vegas, **recommends strategies to designers and architects** for the use of daylighting and electric lighting in interior spaces to "improve the human experience" and energy efficiency. The newsletter also provides guidelines for using daylighting in varying climates, and lists related books and other studies. Go to www.informedesign.umn.edu.

### CONTENTS


310 **Creative Uses**
315 **Duvet**
*Andres Escobar & Associe; XS Lighting & Sound*
320 **Leadership Center at Cedarbrook**
*Candela*
326 **Royal Academy of Arts Restaurant**
*McInnes Usher McKnight Architects; DHA Designs*
331 **Lighting Products**


Lighting helps to shape every type of architectural interior, but perhaps nowhere are expectations as high as in hospitality projects. For restaurants, nightclubs, bars, hotels, and conference centers, patrons have come to count on ambience as a major part of the social and aesthetic experience. And nowadays, it seems, lighting experts rank up there with star chefs or hot DJs as essential partners in plotting a successful venue.

This month, we present a trio of projects that follow different paths to successful lighting plans. Duvet, a New York City nightclub where diners literally crawl into bed for dinner, embraces the latest light-emitting diode (LED) technology to wrap surfaces in colored light. Interior designer Andres Escobar and Dougie Lazer, of XS Lighting & Sound, have collaborated on an adventurous space that catches the eye at every turn.

Daylighting is a key ingredient at Washington Mutual's new conference center at Cedarbrook in SeaTac, Washington. A key strategy employed by lighting designer Candela was to bring views and sunlight in, so conferencegoers on retreat wouldn't feel trapped in claustrophobic meeting rooms. The lobby of a similarly scaled chain hotel might have low-level illumination, but here the great room's ambient light levels are subtly elevated to support guests reading memos or conference reports.



In London, an uninviting and underperforming restaurant at the Royal Academy of Arts was refurbished and relit to raise the bar on style and service (right). McInnes Usher McKnight Architects worked with lighting consultant DHA Designs to wash the venue in colored light, in this case relying on cold-cathode fixtures. The original public access to the restaurant was somewhat hidden, so new signage and lighting raises its profile. Lighting the art was also a priority; celebrated murals by Fred Appleyard, Harold Speed, Gilbert Spencer, and Leonard Rosoman are illuminated for the first time, fulfilling the original intentions of the artists. And sculptures from the permanent collection by Royal Academicians, together with works from private collections, are spotlit throughout the restaurant. The revamped eatery now introduces a true sense of the artistic wealth represented by the Royal Academy, while the colored light also delights. *William Weathersby, Jr.*

PHOTOGRAPHY: © RICHARD BRYANT/ARCAID.CO.UK



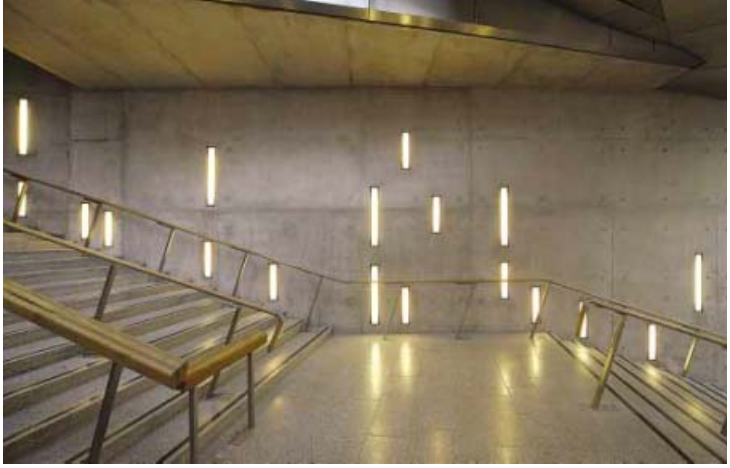
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# Creative Uses

## OVI sheds light on the saga of its Scottish Parliament commission

The saga of constructing the new Scottish Parliament complex in Edinburgh is an intricate tale of political intrigue, massive cost and square-footage increases, and the untimely death of its principal design architect, Enric Miralles [RECORD, February 2005, page 98]. For lighting designers Jean Sundin and Enrique Peiniger, principals of New York City–based Office for Visual Interaction (OVI), the assignment's diversity of scope was a daunting trial of endurance. "The complex comprises some of the most dynamic three-dimensional spaces we have come across during our work as lighting consultants," Peiniger says. "Our comprehensive scope of work included every space of the 325,000-square-foot project (with the exception of basement and mechanical areas) and covered interior and exterior lighting, daylighting, and illumination for television broadcasting."

Interior spaces within the government facility, designed by the joint-venture team of architects EMBT and RMJM, range from an intimate café under a vaulted ceiling to a vast Debating Chamber seating several hundred people. Lighting solutions combine new technologies—sources such as light-emitting diodes, cool-color temperature halogens, and CDM metal halides—with custom craftsmanship to harmonize with the dynamic public and meeting rooms. Creative solutions range from luminaires cast in concrete walls to suspended pendants that cascade among vaulted ceilings and skylights.



**OVI took on the challenge of lighting dynamic spaces like the Grand Staircase.**

PHOTOGRAPHY: © ARCHITEKURPHOTO

"The daylighting solutions are fundamentally integrated," Peiniger says. The configuration of the leaf-shaped assembly buildings themselves, for example, serve as large louvers to shield the adjacent Debating Chamber from direct sun.

For office lighting inside the new assembly towers, the lighting team's goal was to minimize hardware costs. Standard surface-mounted, linear fluorescent fixtures were specified within cast-concrete profiles. The lamps were recessed into continuous slots sized wider than the luminaire profile to create a "shadow gap" on each side. Service equipment such as speaker and fire-safety mechanisms were integrated within the lighting systems. The luminaires are flush with the ceiling and arranged in bands, pulled away from the perimeter edge to emphasize the shape and configuration of the rooms. To maintain the overall nighttime appearance of the buildings, a fixture with a reflector minimizes brightness and avoids bright stripes on the concrete ceilings.

Recessed compact fluorescent downlights also work with the radial




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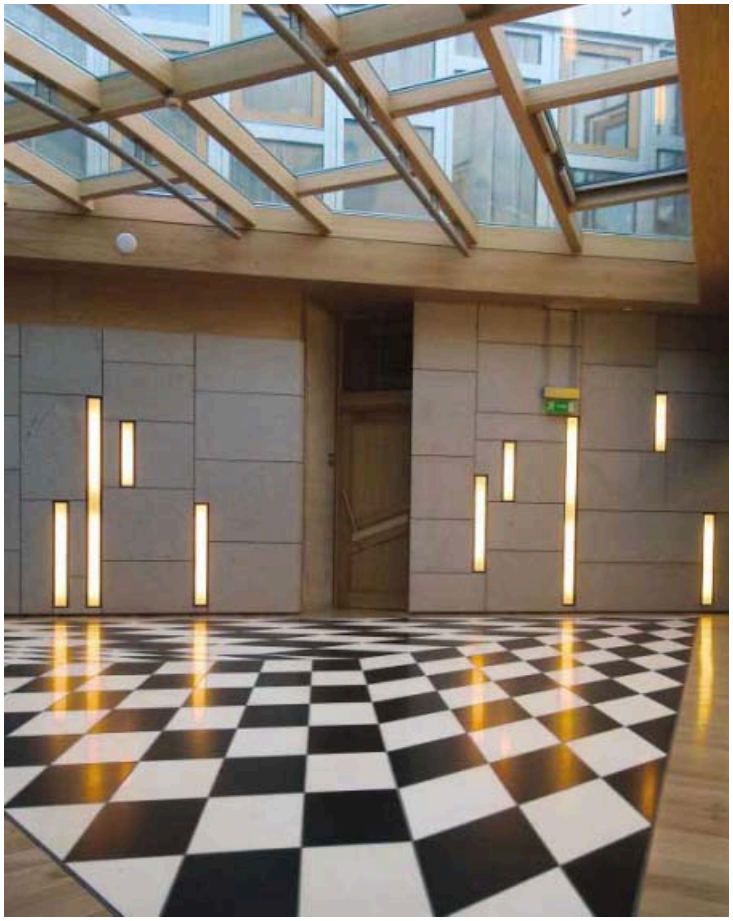
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**Lighting solutions were engineered as extensions of the architecture.**

PHOTOGRAPHY: © ROLAND HALBE (LEFT); T. MAYER (RIGHT)

pattern of the enclosed offices within the towers. Compact fluorescents support energy efficiency and flexible configurations while responding to the sculptural nature of the building. The downlight design was modified for installation in concrete.

For broadcast-ready committee rooms, a lighting language of slots and pendants appears decorative, while supporting strictly technical lighting instruments in specific sectors. The location and length of the slots was determined once all aiming angles and light-level calculations were satisfied. Pendants were grouped into clusters to minimize hanging points. The pendants are multistem, based on the architectural imagery of tree branches. They are design-engineered to allow lockable field adjustment in height and rotation of the luminaires.

"Lighting solutions were engineered as an extension of the expressive architecture," Peiniger says. "The illumination is absorbed into the architectural forms, not applied, to allow the lighting and building to age together over time." *W.W.*

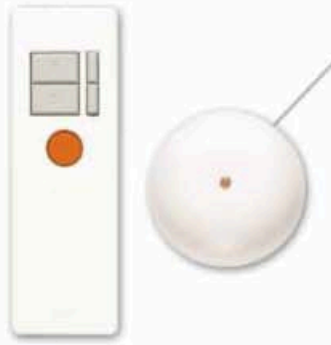



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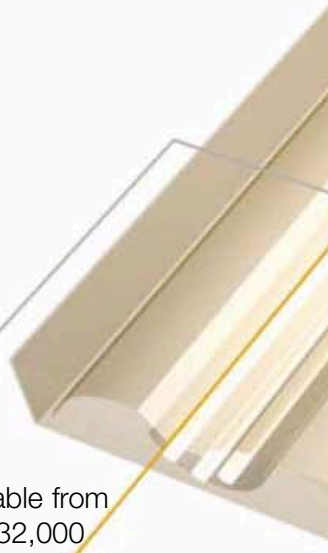


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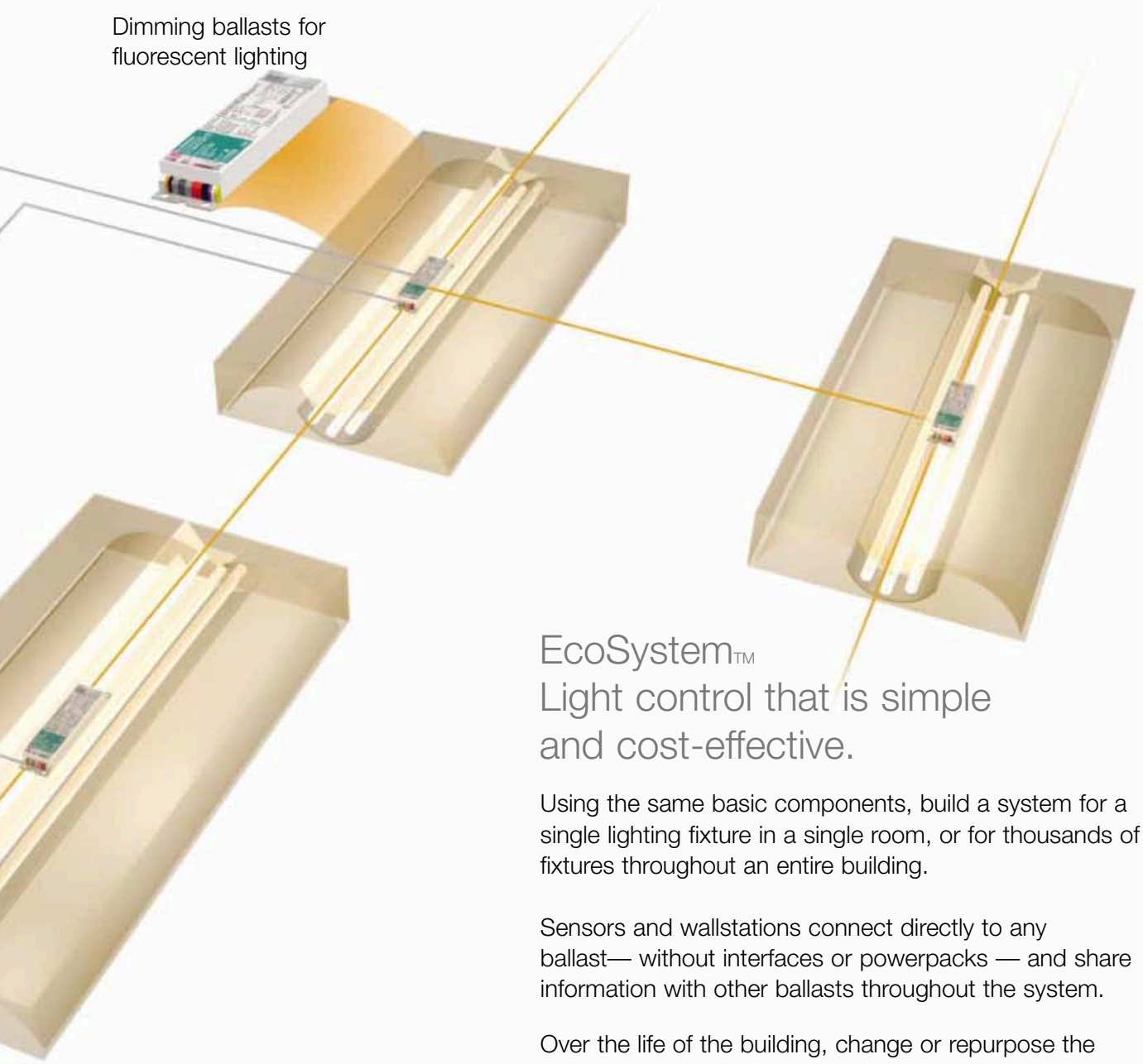


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PHOTOGRAPHY: © JERRY RUOTOL

# At the New York City nightclub **Duvet**, evocative lighting complements sybaritic interiors by Andres Escobar

**By William Weathersby, Jr.**

I'll admit I had some initial doubts about Duvet. The new Manhattan nightspot's motto, "Upscale dining while reclining," put me in mind of a post–*Sex in the City* scenario in which patrons in pajamas passed around hors d'oeuvres in bed, Hugh Hefner–style. In a club trend that seems to have migrated northward to New York City from Miami, Duvet joins another new Chelsea district venue, Bed, as the latest restaurant and lounge where guests take the term "laid-back" literally. Though standard dining tables ring Duvet's perimeter, most guests enjoy dinner and drinks while relaxing atop one of 30 oversize platform beds piled with pillows.

What might have become merely a one-note, over-the-top theme, however, has been orchestrated at Duvet with flair by interior designer Andres Escobar. A Colombian designer who emigrated to Montreal, he has introduced an imaginative viewpoint to this Manhattan nightlife landscape. With Venetian plaster walls, silver-leaf ceiling details, and art-glass fixtures, the 20,000-square-foot, two-level club is stylishly sybaritic. The standout element in the cocktail-hour mix is sophisticated, color-changing lighting that seems to infuse every surface.

Bringing Escobar's creative vision to life, lighting consultant Dougie Lazer of XS Lighting & Sound fitted, programmed, and installed more than 840 feet of Color Kinetics light-emitting diodes (LEDs). The linear runs of LEDs, which can be programmed to create more than 16 million colors, outline the glass bars, up- and downlight the platform beds, and wash Lycra ceiling scrims and nylon draperies.

**Constructed of cast-glass panels lit by color-changing LEDs, the main bar has the look of moonlight or fire viewed through ice.**

"The lights are fully enclosed in several areas, such as the glass bars, so their long source life and low maintenance were critical factors," Lazer says. "The club uses a tremendous number of lights, and since the LED-based fixtures are low-power, they are not running on high-voltage or generating a lot of heat," he says. Typically, the new-generation LEDs will perform for 100,000 hours, or more than 10 years, without requiring replacement, he notes.

A key set piece at Duvet is the 90-seat walk-around main bar. Inspired by blocks of ice illuminated at a party sponsored by a liquor company, Escobar decided to translate the look to a more permanent architectural mode. Vertical bar fronts are cast-glass panels with a texture simulating the surface of blocks of ice. Color-changing LEDs set at floor level backlight the glass, "so it's like seeing red flames or blue moonlight through an ice flow," Escobar says. Additional LEDs set within a trough



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**LED lighting beneath the platform beds and bordering nylon draperies creates an ethereal landscape (above). Lycra ceiling panels throughout the club serve as scrims for additional light projections (below).**

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**LED fixtures change color cues frequently, accompanied by sweeps of light cast by automated luminaires (left). Wine storage cases lit by LEDs border the lavatory (below).**

light the smooth glass bar tops. Nearby, conical cast-acrylic bar tables also feature internal LEDs, whose color changes are synchronized with the main bar. Ceiling-recessed MR16s provide bartending task lighting.

Another eye-catching effect is an illuminated 15-foot jellyfish tank near the main bar. "When the LEDs change color, the 100 jellyfish themselves absorb light and appear to change color, while the water seems to remain clear," Lazer says. (Note to Duvet patrons: On our recent evening visit, the jellyfish had been removed for tank maintenance, but management promised the mesmerizing effect would return soon.)

More than 75 LED units light the venue's ceiling throughout, while automated luminaires throw sweeping beams of light across pathways near the bed platforms. Elsewhere in the space, approximately 60 LED MR lamps generate scattered bursts of color. Because they are designed to retrofit standard MR16 fixtures and sockets, the lamps were easily mounted for multiple applications: beneath glass paving in the entryway, inside dining tables, and adding unexpected flair to the unisex bathroom, where a communal lavatory looks onto a glass-enclosed wine cellar. "The lamps were a good choice for the latter location, where low heat emission was vital to the storage of fine wines," Lazer says.

Though presenting a broad menu of "progressive American cuisine" by top chef David Coleman, Duvet's eating-in-bed ambience is admittedly an acquired taste. For the adventurous and agile clubgoer, however, Escobar and Lazer have created a comfort zone where one can enjoy the light show sparking the social fireworks. ■

**Project:** *Duvet, New York City*
**Interior and (conceptual) lighting designer:** *Andres Escobar & Associe—Andres Escobar, principal*
**Lighting consultant:** *XS Lighting & Sound—Dougie Lazer*
**Architect:** *RIP Construction Consultant*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

**Sources**
**LED lighting and controls:** *Color Kinetics*
**Custom lighting fittings:** *XS Lighting & Sound*
**Automated luminaires:** *Elation; High End Systems*
**Glass:** *Think Glass by Mailhot*
**Ceiling:** *Lycra*



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# Candela fills the **Leadership Center at Cedarbrook** with plentiful daylight and ambient illumination

**By Alice Liao**

At the Washington Mutual Leadership Center at Cedarbrook, residential-style interiors, waterside trails, and outdoor terraces overlooking a verdant campus invite employees on retreat to leave the chaotic business world behind. Designed by architects GGLO, the 107,00-square-foot conference center is 5 minutes away from SeaTac International Airport on an 18-acre site that was selected for its convenience to the insurance company's out-of-town staff. The property's 8 acres of wetlands, which were restored by the client and deeded back to the city of SeaTac, are the center's focal point. Two lodging buildings contain a total of 110 guest rooms, while the main structure houses a variety of meeting and entertaining spaces.

The interiors evoke the Pacific Northwest landscape with soothing color palettes and natural materials, including native fir and cedar. Wraparound windows offer sweeping views of the restored wetlands and bring plentiful daylight inside. Lighting consultant Candela built upon the generous daylight with an illumination plan that enhances the architecture, creates a comfortable ambience, and promotes sustainability.

"Even though the project was not submitted for LEED certification, the design team was encouraged to pursue everything possible to create a sustainable building," says project lighting designer Mary Claire Frazier. "From a lighting point of view, that meant achieving energy savings and avoiding light trespass in the wetlands."

Dimming systems and compact fluorescent sources anchor the interior lighting. Incandescent lamps are kept to a minimum and dimmed to extend their lamp life. In areas receiving abundant daylight, little or no supplemental illumination is required during the day, further reducing energy consumption. Even up against Washington State's strict energy guidelines, "we came in under code by 15 percent," Frazier notes.

In the guest check-in area of the main conference building, broad windows and clerestories wash the lobby and adjacent great room in sunlight. At night, custom pendants with linen diffusers work in tandem with ceiling-recessed MR16 accent lights to provide ambient illumination. Additional wedge-shaped uplights help define the 30-foot-high ceiling. According to Frazier, ensuring sufficient brightness in the vast space was a challenge because fixture locations were limited by the central staircase and the openness of the interior architecture. And unlike

*Alice Liao is a freelance writer based in Teaneck, New Jersey. She specializes in lighting and interior design.*

**Project:** *Washington Mutual Leadership Center at Cedarbrook, SeaTac, Washington*
**Lighting designer:** *Candela—Mary Claire Frazier, IALD, project manager*
**Architect, landscape architect, interior designer:** *GGLO—Jim Moore, Carol Schaefer, principals; James Bradley, project architect; Dwight Doty, Pamela Trevithick, Jennifer Thuma, Wendy Personett, Kirsten Malone, project team*
**Consulting landscape architect:** *Hewitt Architects*





**Exterior lighting for the center at Cedarbrook relies largely on custom pendants fitted with metal halides (above). Floor and table lamps support reading in the great room (opposite). Pendants, uplights, and MR16s light the arrival zone (below).**

PHOTOGRAPHY: © PETER PAIGE, EXCEPT STEVE KEATING (THIS PAGE, TOP)



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**Sconces and ceiling-mounted fixtures provide low-key ambient illumination in the main restaurant (above). A conference room balances daylight with uplights set within a soffit, downlights, and accent lights grazing the wall opposite the windows (below).**

typical hospitality lounges, where 5 to 10 foot candles is standard, corporate guests who might want to read memos or reports in the great room would require light levels approaching 15 to 20 foot candles. Table and floor lamps placed throughout the room support "serious reading" while reinforcing the venue's residential ambience. Niches designed for smaller gatherings are intimately lit with soffit-mounted MR16 downlights.

While each building hosts an array of informal breakout areas, the major meeting facilities house two conference rooms (one of which can be subdivided into three smaller spaces), a prefunction space, and a

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120-seat auditorium. Accommodating everything from informal presentations to Webcasts and televised press conferences, the auditorium has a flexible lighting system fully integrated with the high-end audiovisual equipment. Tucked above a series of ceiling panels, pairs of fluorescent covelights direct light toward the front and back of the room. Recessed in the sides of desks, light-emitting diode steplights assist with wayfinding when the auditorium is dark. Flexible task lights at each seat support note taking. Decorative sconces and compact fluorescent wall washers illuminate the perimeter of the auditorium for even light distribution, an important requirement for television cameras.



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**The furnishings and lighting in suites (above left) and guest rooms (below left) aim for a residential ambience that surpasses that of a boutique hotel. Multitask lighting includes compact fluorescent fixtures and zoned downlights.**

Conference rooms feature a combination of covelights and downlights, which are lamped with fluorescent sources operated on dimmers. In rooms where daylight is available from windows along one side, this bright light is balanced by asymmetric covelights set above the windows and wall washers grazing the opposite wall. A zoned control system further regulates lighting for the comfort of meeting participants.

In the gallery that serves as a prefunction room, Frazier maintained the openness of the ceiling cavity by lighting it with two T5 lamps concealed in a perimeter cove. Pendants matching those in the lobby reappear here to punctuate the long, narrow space. The same pendants are also repeated in guest-room buildings, where they set the tone in lounges and suggest a visual continuity throughout the facility. The three buildings are linked by a covered passageway lit with custom metal pendants fitted with 70-watt metal-halide lamps.

In the main restaurant, wall sconces and ceiling-mounted fixtures provide elegant yet low-key lighting, and MR16s accent artwork and buffets. In the library, where the ceiling is lower and the setting is more informal, a row of downlights adds punch above a pool table.

For Washington Mutual, this training facility has been popular with employees, while reflecting a corporate culture that aims to give back to the community: Plans by the city will allow local residents to enjoy the wetlands and the trails along the periphery of the property. ■

**Sources**
**Compact fluorescents:** *Portfolio*
**Accent lights:** *Edison Price*
**Indirect coves:** *LAM*
**Sconces:** *Boyd; Global Lighting; Eureka; Belfer; Zaneen*
**Table and floor lamps:** *Global Lighting; Nessen*
**Exterior pendants:** *Rebelle*
**Task lites:** *Littlite*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



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New disk pendants set into the Royal Academy restaurant's Classical ceiling coffers shield cold-cathode lamps that uplight the ceiling (this page and opposite). The lighting is programmed to change from a daytime setting of warm, white light to dramatic hues in the evening. The disks are made of a sound-absorbent material to improve the room's acoustics. A screen outside the window is lit by metal halides.

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# Colorful lighting graces Classical art and architecture at the **Royal Academy of Arts Restaurant**

**By Leanne French**

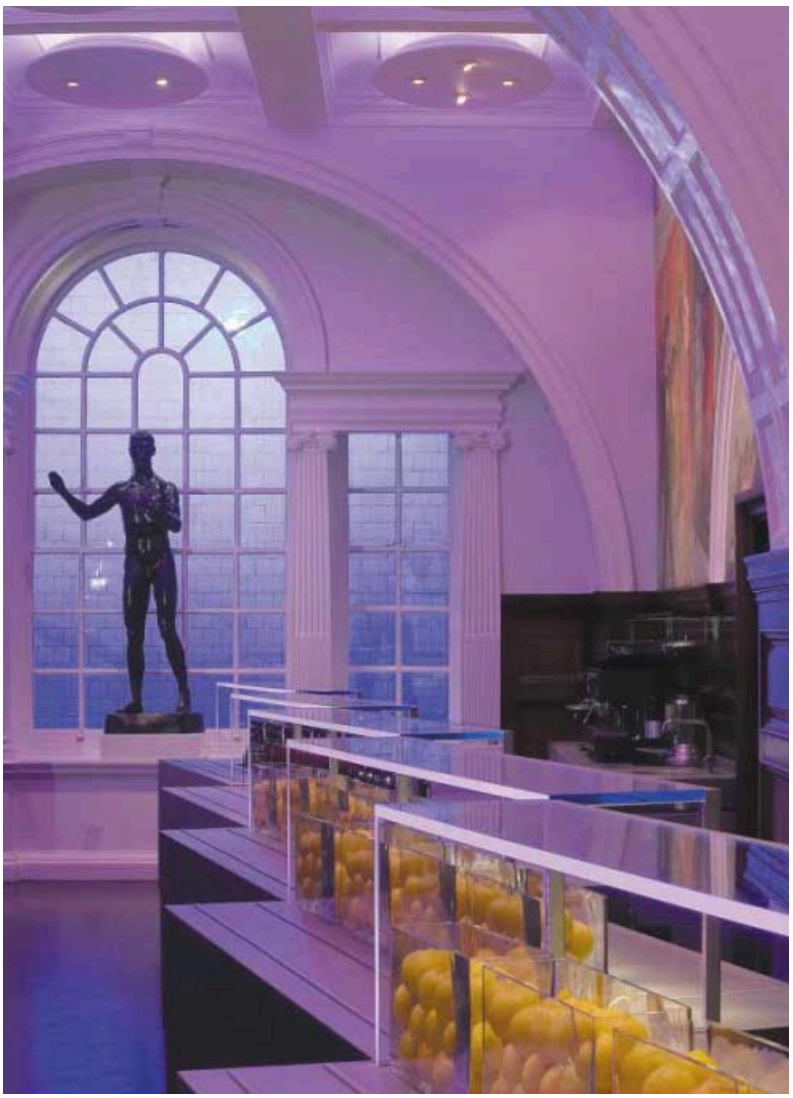
When museum officials at the Royal Academy of Arts (RA) decided its dining area had lost its luster, they launched a competition to revitalize the Classical space designed in 1885 by Richard Norman Shaw. Six firms competed to revamp the restaurant to honor the RA's high profile as one of London's premier art institutions, which is housed in the West End's historic Burlington House. The winning design team, McInnes Usher McKnight Architects (MUMA), was selected in part because of its imaginative use of lighting. New color-changing effects now cast a bold image for the dining area while respecting original architectural elements. The reworked lighting plan also helps to better celebrate art within the space.

MUMA principal Stuart McKnight explains that the restaurant, which had been updated only three times since Shaw's conception, had recently devolved into a gloomy, noisy venue suffering from drab lighting, dark wood finishes, and uninspired wall colors. Poor space planning and acoustics also plagued the rooms. And though situated on the ground floor, the space lacked adequate daylight because of the close proximity of neighboring buildings. "We wanted to use light and sound to transform the restaurant without disturbing its historic fabric," says McKnight.

The design team began by creating a blank canvas for the lighting with a neutral envelope of white walls and ceilings. A Grade 1 Listed Building (the highest listing in the U.K.) such as the RA "is highly cherished, and any alterations, even colors, are carefully controlled," explains McKnight. "Our approach was to emphasize the positive aspects of the existing space, paying particular attention to art incorporated within the building's fabric. By using simple furnishings and neutral colors, we created a calm environment in which existing wall murals could be accentuated."

To execute its lighting concepts, MUMA teamed with the lighting firm DHA Designs, which had already established a relationship with the RA after consulting on various temporary exhibitions and on its retail shop. The restaurant's lighting scheme had to convey two moods, one for high-volume, self-service dining during the day and a more formal ambience for waiter-service dining in the evening. "During the day, the ambience is light and airy," McKnight says. "At night, this transitions to a more intimate setting through the introduction of rich colors."

Existing lighting fixtures, which included wall-mounted spheres and clusters of MR16 tungsten lamps hung from the ceiling, were replaced with acoustically absorbent elliptical disks designed by MUMA and hung from the rectangular panels of the coffered ceiling using lengths of white chain. "Above each suspended disk are three rows of 20-millimeter-diameter [.8 inch] cold-cathode tubes," says DHA designer Peter Fordham. "Each row makes up an ellipse, consisting of two curved arcs, making it easy to replace tubes in the future."



The suspended elliptical disks uplight the coffered ceiling and also provide a location for recessed MR16 spotlights to subtly wrap dining tables in a "cocoon of light," McKnight says. The light fixtures also provide an acoustically absorbent surface distributed evenly throughout the space, while the adjustable MR16s illuminate artworks set throughout the rooms. Large murals placed in archways are front-lit by pairs of MR16 profile projectors, which are shuttered so each beam of light tightly focuses on the exact dimensions of a panel.

The neutral backdrop of the room now accentuates changing colored lighting scenes, which transform the dining experience and help to attract a younger crowd at night. Cool blue lighting harmonizes with live jazz on Friday nights, when curved leather banquettes can be rotated 90 degrees to create a separate area for predinner drinks. A minimum of

*Leanne French is a freelance writer based in New York City. She is a frequent contributor to the special lighting section of* RECORD.

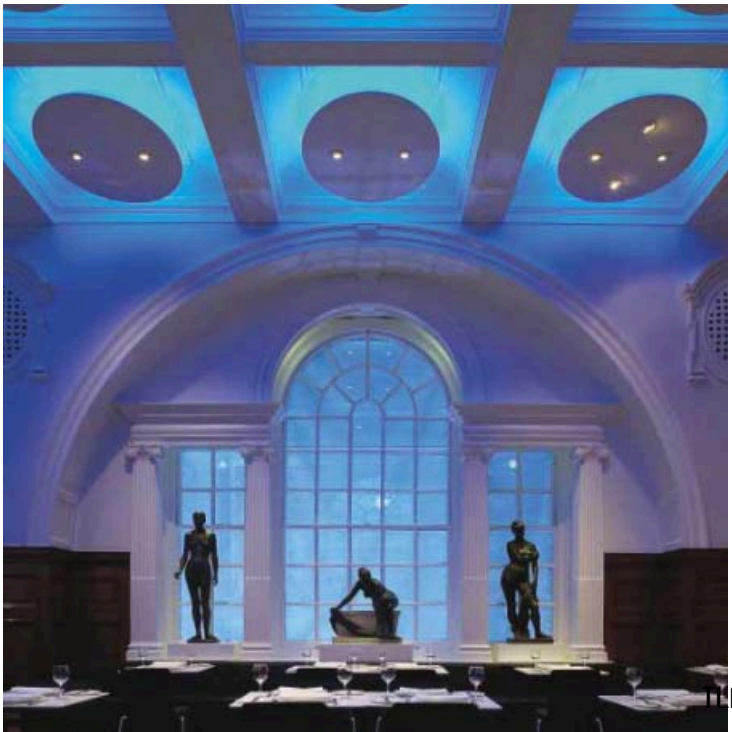
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**The RA's Classical sculpture is illuminated by adjustable LEDS that cast warm white light (above). Daytime settings of white light yield to colorful nighttime effects (below).**



10 lighting scenes are programmed to change the ambience from shades of pink, red, and purple, then back to white for daytime. The servery units, which are lit from below by LED luminaires, can also be programmed to change colors to complement the overhead illumination.

Lighting even helps to conceal an unsightly external fire escape, which is masked by translucent screens washed with blue light from external metal-halide floodlights mounted at a low level. Metal-halide floodlights mounted above the exterior of the windows cast a pale-blue backdrop onto three white-glazed brick panels across from the customer service lane. McKnight says once additional funds become available, he hopes to project digital art onto these surfaces. It's a gesture that will further update the space, connecting historic art and architecture with contemporary innovation. ■

**Project:** *Royal Academy of Arts Restaurant, London*
**Architect:** *McInnes Usher McKnight Architects (MUMA)—Stuart McKnight, principal*
**Lighting designer:** *DHA Designs—Peter Fordham, project designer*

**Sources**
**Wall washers:** *Zumtobel Staff*
**Downlights:** *Lucent*
**Mural spotlights:** *TSS Lighting*
**Cold cathode:** *Kemps Neon*
**Exterior floodlights:** *BDC*
**LEDs:** *AC/DC Lighting*
**Lighting controls:** *Dynalite*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

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# Lighting Products

### ▼ Smallest metal-halide track spot

According to Amerlux, the company's new Topaz T4 is the smallest energy-efficient metal-halide track luminaire on the market. Utilizing the 20-watt T4 ceramic metal-halide lamp and the latest in miniature ballast technology, the Topaz T4 is engineered for small size, maximum performance, and longer life. Crafted with a die-cast aluminum lamp and ballast housing, the lamps are ideal for new construction as well as retrofit locations to replace halogen line and low-voltage incandescent fixtures. Amerlux Lighting Solutions, Fairfield, N.J. www.amerlux.com **CIRCLE 200**



### ► Brighter tile design



Light Tile, from Villeroy & Boch, features a LED lighting component integrated into individual wall and floor tiles. The dust- and waterproof Light Tile fixture is embedded into the tile, protected by a wear-resistant, coated-stainless-steel frame fitted flush to the surface. The 12-volt light is available in white, blue, and amber, and can be partnered with a selection of Villeroy & Boch tile styles. On square tiles, the 1½" lighting element is centered; on rectangular tiles, one or two lighting elements can be positioned along the central axis. Villeroy & Boch, Monroe Township, Pa. www.villeroy-boch.com **CIRCLE 202**



### ▲ Striation-free beams

Peerless Lighting makes its debut into interior architectural floodlighting with Lightfoil 2 and 3. Designed for contemporary, large-scale environments, Lightfoil's refined optical-system design produces an abundant, striation-free beam with a ceiling brightness gradient equal to or smoother than any other floodlighting product, according to the manufacturer. The curved wing is composed of Reynobond composite in a white, silver, or bronze finish. Peerless Lighting, Berkeley, Calif. www.peerless-lighting.com **CIRCLE 204**



### ◄ Light mobiles

London-based designer Miranda Watkins has created a new series of Modernist mobiles and custom lighting installations that demonstrate her knowledge of materials. The made-to-order lighting installations are constructed from Perspex and anodized-aluminum panels that cascade in clusters around a central light source, diffusing the light randomly while creating visual patterns. The aptly named Random light, shown at left, is the first in the series. Miranda Watkins, London. www.mirandawatkins.com **CIRCLE 201**

### ▼ Ribbons of light

For the Colorado Convention Center expansion project, Lam Partners of Cambridge, Massachusetts, was retained to work with the Fentress Bradburn project team on the interior and exterior lighting. To illuminate the escalators and stairs, the team chose Onda, a suspended, linear indirect/direct light that provides softly diffused undulations of glare-free light. Ribbonlike extruded aluminum waves form curvilinear shades along Onda's 6', linkable module lengths. Luxo, Elmsford, N.Y. www.luxous.com **CIRCLE 203**



### ► Brainy bollard

The Annapolis Smart Bollard is the first bollard with integrated solar-powered lighting provided by advanced LED technology, according to Landscape Forms. The bollard was developed in response to customer requests for a lighted bollard designed for use in areas where wiring is neither feasible nor convenient, or where security demands lighting that is off the grid. Under typical conditions, it will run for up to 15 hours per day and requires 3 hours of daylight to recharge. With a fully charged battery, Smart Bollard can operate up to 150 hours without recharging. Landscape Forms, Kalamazoo, Mich. www.landscapeforms.com **CIRCLE 205**





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# Lighting Products



**◄ Arts & Crafts light design**

Architectural Area Lighting's new Arts & Crafts product line features a lightly diffused lens option for glare-free illumination. The Arts & Crafts line utilizes efficient lamp sources and an electronic ballast option for better color rendering and efficiency. Hood finishes include stainless steel, copper, opal acrylic, mica, and painted aluminum. Mounting configurations include post top as well as wall and pendant mount. Architectural Area Lighting, La Mirada, Calif. www.aal.net **CIRCLE 206**

**▼ Pure lighting effects**

Ledalite has introduced PureFX, a recessed lighting system that offers controlled brightness and significant energy savings over traditional recess fixtures, according to the manufacturer. PureFX provides these features through the use of Ledalite's MesoOptics technology, a holographic material that produces diffuse patterns of pure white light that are highly controlled and directed. PureFX uses up to 36 percent less energy than standard fixtures and comes in a range of lamping options and housing sizes. Ledalite Architectural Products, Langley, British Columbia. www.ledalite.com **CIRCLE 207**



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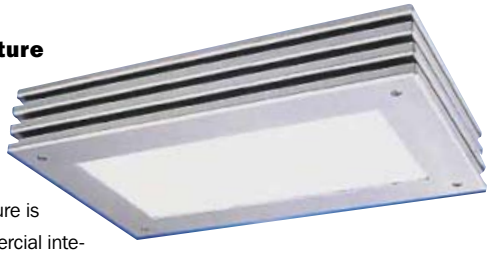
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**▲ Little brother of a classic**

Louis Poulsen's recognizable PH Artichoke pendant is now available in a smaller size better suited for use in small spaces in commercial and residential projects. The 18.9"-diameter PH Artichoke is available in three finishes: brushed copper, brushed stainless steel, or white painted steel. The light consists of 72 leaves that eliminate glare by concealing the light source from all angles. The original lamp was designed exclusively for the Langelinie Pavilion in Copenhagen Harbor almost 50 years ago. Louis Poulsen Lighting, Fort Lauderdale. www.louispoulsen.com **CIRCLE 208**

**► Layered light fixture**



Strato Rectangle provides evenly distributed, glare-free, ambient interior downlighting in a textural 3D fixture design. The fixture is ideal for a range of commercial interiors, including upscale retail, professional offices, hospitality, and health-care facilities. Strato Rectangle is constructed from an all-aluminum body with a sand-blasted opal glass lens. It can be specified for ceiling or wall mounting and is ADA compliant. D'ac Lighting, Mamaroneck, New York. www.daclighting.com **CIRCLE 209**



**▲ Airfoil form luminaire**

Beta Lighting's Aviator Area Lighting series of architectural luminaires is available in a segmented Type II and Type IV optic and meets full IESNA cutoff classification. The housing is a rugged, one-piece die-cast aluminum casting with integrated mounting arm. Two housing sizes are offered: a 400-watt version measuring 18½" wide by 19.6" deep and a 175-watt version measuring 12" wide by 14" deep. In either size, the luminaires can be mounted in multiples of up to four on a single pole with no special mounting hardware. Beta Lighting, Sturtevant, Wis. www.beta-lighting.com **CIRCLE 210**

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# Lighting Products



**◄ Large-scale sconce**

As an extension of the Aliante lighting system, Ivalo Lighting has launched its new large-scale Aliante exterior sconce. The first of a series of introductions for this year and next, the sconce's 5'-long steel shell is created from .060"-thick steel using cutting-edge automotive stamping techniques. The elongated shell is available in lustrous silver or bronze powder coat as well as custom powder coat colors. The product is gasketed for wet rating, has UL approval, and comes in a choice of 120-volt and 277-volt dimming and nondimming options. Ivalo Lighting, Willow Grove, Pa. www.ivalolighting.com **CIRCLE 211**





**▲► New lighting avenue**

Harnessing the power of a single T5/T5HO lamp, Avenue A utilizes a precision-formed micro-optic that delivers high levels of vertical illumination and washes walls with shadow-free light. The 2" aperture disappears into the ceiling, and the design allows for installation into either grid or drywall ceiling applications. Placed 24" to 30" from the wall, Avenue A is ideal for classrooms, conference rooms, corridors, featured walls, and for highlighting artwork. With less than a 3" aperture, the frosted-acrylic lens of the Avenue B version produces soft, glowing, direct illumination. Focal Point, Chicago. ww.focalpointlights.com **CIRCLE 212**

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# Products

## Contract Carpet

New technologies in **contract carpet** not only make way for products that are more sustainable, comfortable, and maintainable, but allow for more sophisticated patterns and color palettes. Specifiers can also **easily visualize the end result** through an array of user-friendly carpet design software. *Rita Catinella Orrell*

### New carpet collaboration influenced by man-made and natural formations

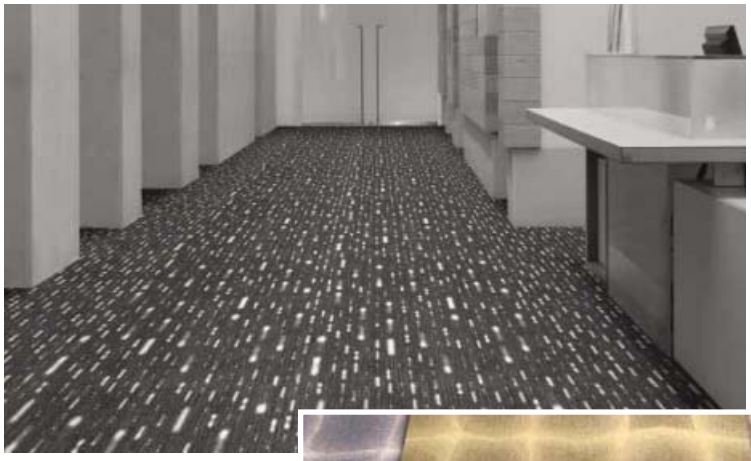
Milliken Carpet and SOM Collaborative have launched Way, a 36" modular carpet collection with 3D designs that depart from traditional inspirations such as art and fashion toward man-made structures and geological formations.

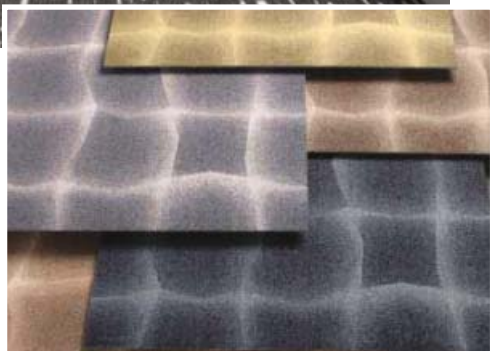
The collection utilized Millitron, a new high-definition printing technology from Milliken that allowed SOM and Milliken designers to create fine gradations of color and layers of visual texture that simulate dimension. Milliken also reformulated colors to achieve palettes in six high-contrast color families, including blue-blacks, browns, greens, silver-blues, reds, and charcoals.

The three design families in the line include Riverbed, which captures the illusion of light on water; Urbanscape, influenced by cityscapes and aerial shots of highways and traffic; and Forcefield, inspired by images of bridges, airports, and city blocks. Each design family includes three patterns that increase in complexity and scale.

Using Pattern Builder software, developed by the collaborative, users can click and drag modular designs onto a grid and rotate them in any direction to compose their own graphic art.

According to Milliken, Way is 100 percent sustainable and can be renewed through the firm's Earth Square process or recycled by other means. Milliken Carpet, LaGrange, Ga. www.millikencarpet.com CIRCLE 213





**Urbanscape (above) was inspired by aerial shots of traffic. Geological formations such as glaciers and lakes influenced Riverbed (right). Both patterns are available in three scales.**

### Coordinating tile and carpet palette

Crossville has designed its new Color Blox porcelain stone tile collection to coordinate with Bentley Prince Street's broadloom and carpet tile products. The smooth, unpolished surface of Color Blox is softened by shade variations from tile to tile, which imparts a handcrafted look while making it easier to match the tile with other finishes and furnishings. The collection features a palette of 20 hues.

"This collaboration will allow specifiers to easily create unique tile installations of multiple sizes and colors, or accent a basically solid tile floor with blocks of color—then tie it all together with a coordinating Bentley Prince Street carpet or carpet tile in a neighboring area," says Jim Dougherty, V.P. of marketing and business development for Crossville.



The two companies' marketing initiatives will include advertising and online marketing campaigns to inspire specifiers to coordinate their products in commercial and residential projects. Crossville, Crossville, Tenn. www.crossville.com CIRCLE 214

### Comprehensive backings binder

As an aide to specifiers, The Mohawk Group has created the *Architects Folder* devoted to carpet backings, with cut samples and definitions of each. The 11 systems in the folder include UltraSet Modular Systems, the company's first hard-back modular tile system. A thermo-stable structured backing of several composite materials, UltraSet is now being incorporated into all Mohawk Commercial and Bigelow Commercial carpet tiles. Another new addition is BioCel, a polyurethane backing that not only increases the carpet's life, but also combines renewable and recycled resources. The technology teams Celceram, a highly refined mineral endorsed by the Environmental Protection Agency, with BioBalance, a rapidly renewable resource from soybean oil. The backing systems utilizing this technology contain an average of 50 to 55 percent postindustrial content, 7 to 15 percent consumer content, and 7 to 10 percent renewable resource. The Mohawk Group, Kennesaw, Ga. www.themohawkgroup.com CIRCLE 215





TLFeBOOK

# Products Contract Carpet

### ▼ High-tech carpet patterns

Thought Patterns is the result of a collaboration between Lees Carpets and Tricycle, a company that offers technology, products, and services to the manufacturers of contract interiors. Thought Patterns allows users to choose from 165 patterns and 20 colorways, manage personal project folders, view their choices placed in room settings, and order high-definition "Techno Images" to be delivered within 48 hours. Lees Carpets, Glasgow, Va. www.thoughtpatterns.com **CIRCLE 216**





### ◄ Wool/alpaca blend

Woolshire Carpet Mills is the first U.S. manufacturer to introduce a carpet made from a blend of 80 percent New Zealand wool and 20 percent Alpaca. This fiber, from the fleece of a member of the llama family, is found naturally in 22 distinct colors and can be blended to produce an array of natural shades. The eight colors in the line range from soft beige to gold—all made without the use of dyes. Woolshire Carpet Mills, Calhoun, Ga. www.woolshire.com **CIRCLE 217**

### ► Fiber front-runners



Solutia's 16th annual Doc Competition for contract interior design was held last December in New York City. The competition recognizes outstanding achievement in contract projects and products that feature Solutia Ultron nylon 6,6 fiber. The winners of the Product Design award include Bentley Prince Street for Moda Velvet (above); Constantine Commercial, for Precision Loc and Isobar; Fortune Contract for Loommate; and Invision Carpet Systems for Edge. Solutia, St. Louis. www.solutia.com **CIRCLE 218**

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### ▼ Hand-knotted hemp area rugs

Soroush Hemp Rugs are organic area rugs available in a natural hemp color as well as a range of other tones. Hand-knotted in a choice of cut pile, loop pile, and a cut/loop combination, the rugs are also available in hemp-wool blends. For both public and private spaces, the rugs come in sizes up to 30' x 50'. Soroush dedicates 5 percent of the profit from its rugs to the education of Tibetan children under the direct auspices of the Dalai Lama. Soroush Custom Rugs, Kensington, Md. www.soroush.us



**CIRCLE 219**



### ◄ Neutral and nubby

A natural nubby texture resembling a knitted bouclé fabric defines Fabrique, a new offering from Karastan Contract. The highly tactile characteristics are achieved by use of air-twisted, skein-dyed Solutia Ultron yarn. Available in 13 neutral colors, Fabrique is a nondirectional pattern that does not feature the linear or geometric details typical of wovens. Karastan Contract, Kennesaw, Ga. www.karastancontract.com

**CIRCLE 220**

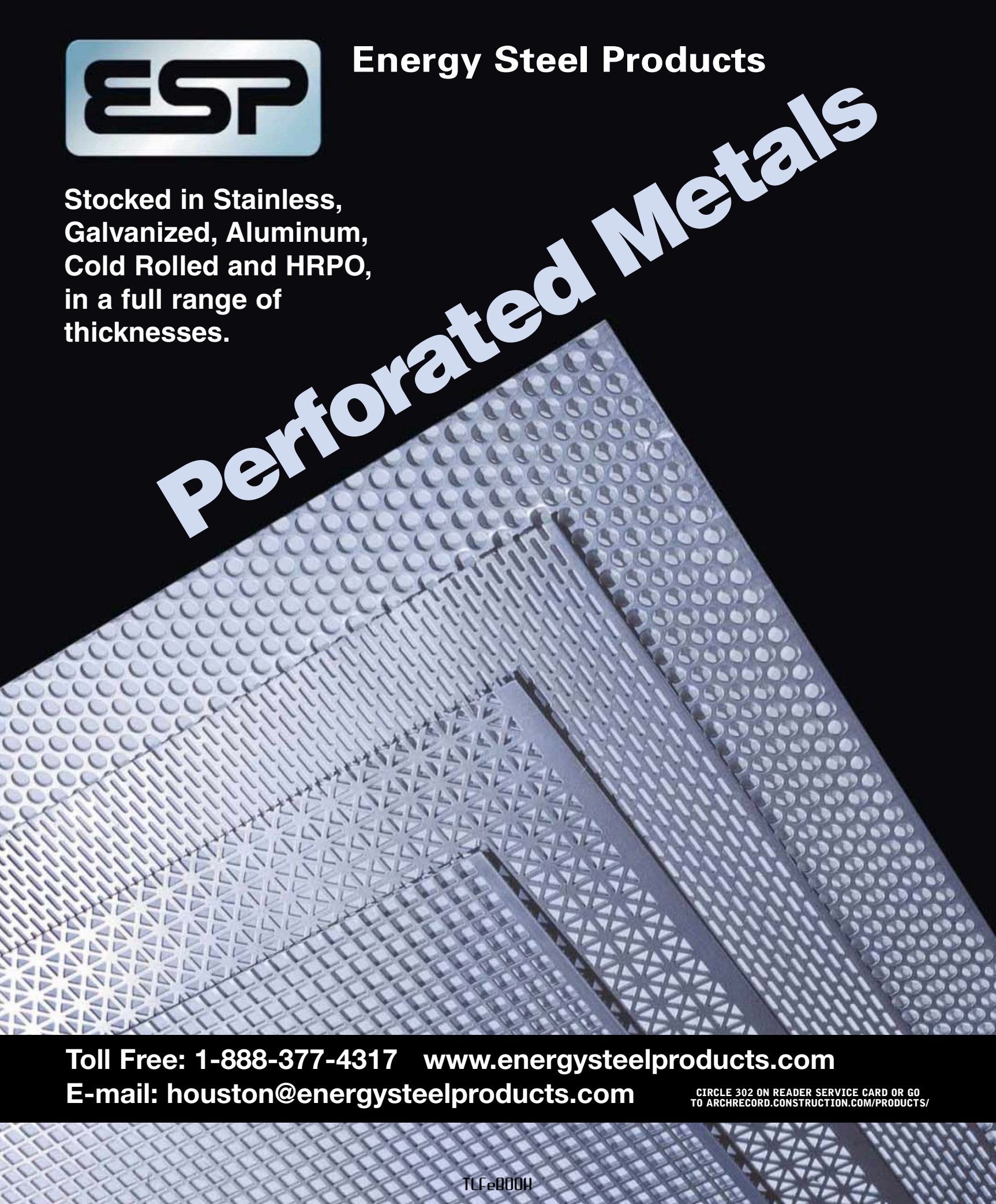


### ◄ Recreating the comforts of home

BioTec is a new floor covering from Mannington Commercial that features a soft surface and a resilient base structure to enhance the homelike comfort and aesthetics of health-care facilities. The products are composed of Invista type 6,6 nylon treated on the face with ColorSafe bleach-resistant technology, and on both the face and back with MCare antimicrobial technology. Mannington Commercial, Calhoun, Ga. www.mannington.com **CIRCLE 221**

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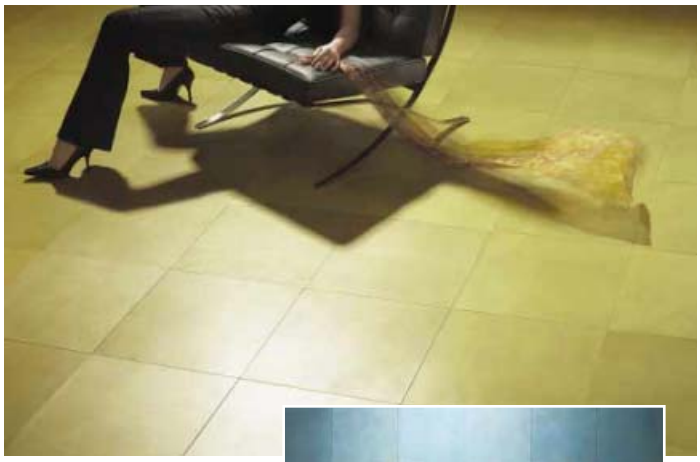


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# Product Briefs

**▼ New modern lever from the firm of a late modern master**

The new H351 door lever, part of Valli & Valli's Fusital collection, was designed by Philip Johnson/Alan Ritchie Architects, the firm of the late Philip Johnson. Crafted in brass and available in satin-chrome, chrome, and brass finishes, the lever features a clean, contemporary design, rising from a circular rosette into a solid handle and tip highlighted by 10 squared-off grooves. The collection also includes window handles, pull handles and knobs, coat hooks, bathroom privacy sets, escutcheons, and a door key. Valli & Valli, New York City. www.vallievalli.com **CIRCLE 222**





**▲► Leather wall and floor tiles**

Blackstock Leather has supplied leather floor and wall tiles to the design industry since 1991. Crafted from natural full-grain cowhide, the tiles can be used in bedrooms, libraries, dens, and hallways, as well as for commercial applications, including offices, conference centers, museums, showrooms, and theaters. The company has developed a magnetic installation system for its tiles that allows the owner to reconfigure the pattern or take it to a new location. The tiles, which develop a patina over time, have a flexible magnetic backing and are installed onto a steel substrate that is supplied by Blackstock. The substrate is painted black on one side and comes in 23¾"-square sheets. Other benefits of the system include a fast and easy installation process and easier maintenance. Blackstock Leather, Ontario, Canada. www.blackstockleather.com **CIRCLE 224**





**◄▼ Ceramic and glass tile**

Mizu (left) is a new family of ceramic tiles from Walker Zanger inspired by classic Japanese stoneware. Featuring deep crackle glazes that create the effect of pooling water, Mizu's color line ranges from golden browns to greens to bright blues. Weave is Walker Zanger's latest collection of iridescent glass mosaics. It is available in four patterns—Offset, Montage, Basketweave, and Straight—in muted tones of autumn gold, pearl, amber, sandstone, sea green, ocean blue, and metallic pewter, among others. Walker Zanger, Sylmar, Calif. www.walkerzanger.com **CIRCLE 223**



**▼ Citterio-designed table/storage system**

Ad One Office is a modular system of tables, storage components, and accessories designed by Antonio Citterio. Optional storage cabinets are placed at table edges while net-fabric screens slip between tables to visually separate workers and provide a sense of enclosure. Cables, fed from the floor through a flexible plastic chain and a work-surface outlet flap, allow for easy access to data, telephone, and power sources. The soft, light color of the table's hard elements may be accented with color provided by the soft mesh fabric in orange, green, yellow, gray, or white, specified on cabinet backs, as freestanding screens, or central table screens. Vitra, New York City. www.vitra.com **CIRCLE 225**





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# Product Briefs

### ► Fabric-inspired tile



Taffeta field tiles, from UltraGlas, incorporate a subtle cross-linear texture that echoes the look and feel of taffeta fabric and lets the tiles emit a radiant inner glow. The tiles come in 31 standard colors, and custom matched colors may be specified. The line is available in standard field sizes at a 5/16" thickness, but it may be specified in greater thicknesses and larger sizes for slab-type installations. The completely lead-free tiles coordinate with an extensive line of UltraGlasTile decos, liners, and corners. UltraGlas, Chatsworth, Calif. www.ultraglas.com

**CIRCLE 226**

### ◄ Revving up a classic design



When a 1951 Emeco chair built for U.S. government hospitals was discovered for sale on eBay, the Hanover, Pennsylvania–based chair company decided to produce an updated edition of the chair for today's market. Designed by Adrian van Hooydonk and BMW DesignworksUSA, the 1951 chair debuted at last month's Milan Furniture Fair. Joining award-winning chair designs by Philippe Starck and Frank Gehry, 1951 features a brushed-aluminum frame that supports a generous ABS plastic seat and back available in five standard colors. It stacks six-high and is offered with a matching bar and counter stool. Emeco, Hanover, Pa. www.emeco.net

**CIRCLE 227**

### ▼ Stonelike lavatory

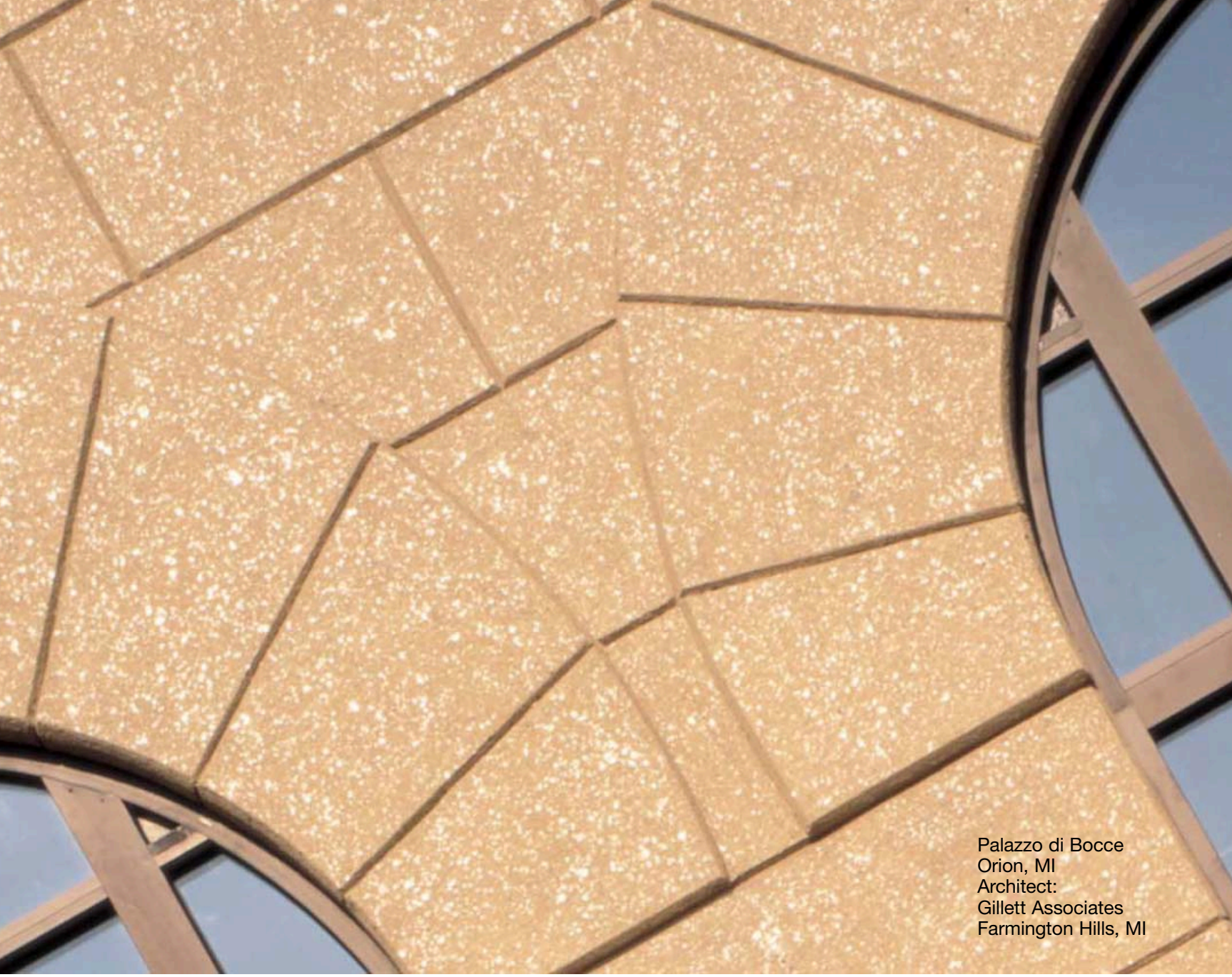
The Pure Stone lavatory from Villeroy & Boch features a sculpted porcelain basin with an organic form that gives the illusion it has been carved from stone. The vessel style is offered in two sizes: 21⅝" or 23⅝". Three color options are available, including White; the brilliant surface of Star White; or the matte surface of Edelweiss. The Star White features *activecare*, Villeroy & Boch's proprietary ceramic glaze that yields a bacteria-resistant, hygienic finish. Any of the three options can also benefit from the addition of *ceramicplus*, the dirt-repellent surface finish that eliminates the need for harsh or abrasive cleansers. Villeroy & Boch, Monroe Township, N.J. www.villeroy-boch.com



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# Product Briefs

### ▼ Furniture fair previews

imm Cologne 2005, held last January in Cologne, Germany, showcased 1,329 suppliers from 48 countries presenting the latest in furniture design. A precursor to April's Milan Furniture Fair, several new products were previewed at the show, including the Boing soft washbasin (below) made of flexible polyurethane foam from Portuguese manufacturer Puntmobles, and the Tag'liatelli chair (below right) from Belgian manufacturer Quinze & Milan, which resembles sticky strands of brightly colored pasta wrapped around a bean bag. imm Cologne, Cologne, Germany. www.koelnmesse.com **CIRCLE 229**







### ◄ Fashion-forward flooring textures

Johnsonite has introduced five additional textures to the company's current six textures and standard 60-color rubber flooring line. The textures include the delicate lines of Bamboo; the nondirectional look of Chopped Bamboo; Pebbles, featuring granual stones that randomly align to create a subtle, workable texture; Artistic Square, a variation of the traditional square pattern through the use of textured tops and grout lines; and Cubis, featuring various heights of lineal squares. Johnsonite, Chagrin Falls, Ohio. www.johnsonite.com **CIRCLE 230**

### ► Customizable and curved panels

Zero Systems, the Italian line of modular systems for retail, work, and exhibition environments, is now customizable with logos and graphics that can help users maximize the visual impact of their installations. Using a direct ink-jet printing technique, nearly any image in any combination of colors can be printed onto Zero System curved or straight aluminum panels. In addition, larger radius curved panels have been added to the collection, allowing for the creation of mobile meeting rooms. Zero U.S., Lincoln, R.I. www.zerous.com **CIRCLE 231**




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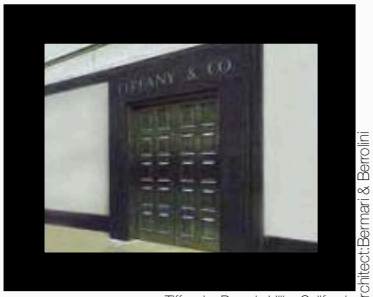
Superior Courthouse, Hartford, Connecticut Architect:The Malnfeldt Associates

EDUCATIONAL



Tufts Dental School, Denver, Colorado Architect:Perry, Dean & Associates

COMMERICAL



Tiffany's, Beverly Hills, California Architect:Berman & Berrolini

RESTORATION



Temple Emanuel, New York, NY Architect:Dan Bartelluce PC Architects

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# Product Briefs

### ▼ The kitchen as a canvas

German kitchen manufacturer Alno has introduced Picture Line, a patented, graphic process that allows a single cabinet or the entire kitchen to act as a canvas. The new technology prints directly onto the doors of kitchen components from more than 150 stock images and graphics, as well as from personal photos or images provided by the consumer. Due to the relatively low cost of the process, the doors can be easily changed with new images from time to time, giving the kitchen an updated look without the cost of new installions. Alno USA, Boston, Mass. www.alno.com **CIRCLE 232**



### ► Protective cover

BlastGard material effectively mitigates the explosive effects of a bomb or other fire-related disasters by reducing the blast effect, extinguishing the fireball, and capturing the deadly fragmentation. The company's BlastWrap solution is being marketed to an array of industries, including aviation, construction, and the military. The FR911 First Responder solution allows police, fire, and military personnel to quickly and safely cover a bomb and clear civilians from the area, while protecting themselves and property. BlastGard, Clearwater, Fla. www.blastgard.net **CIRCLE 233**





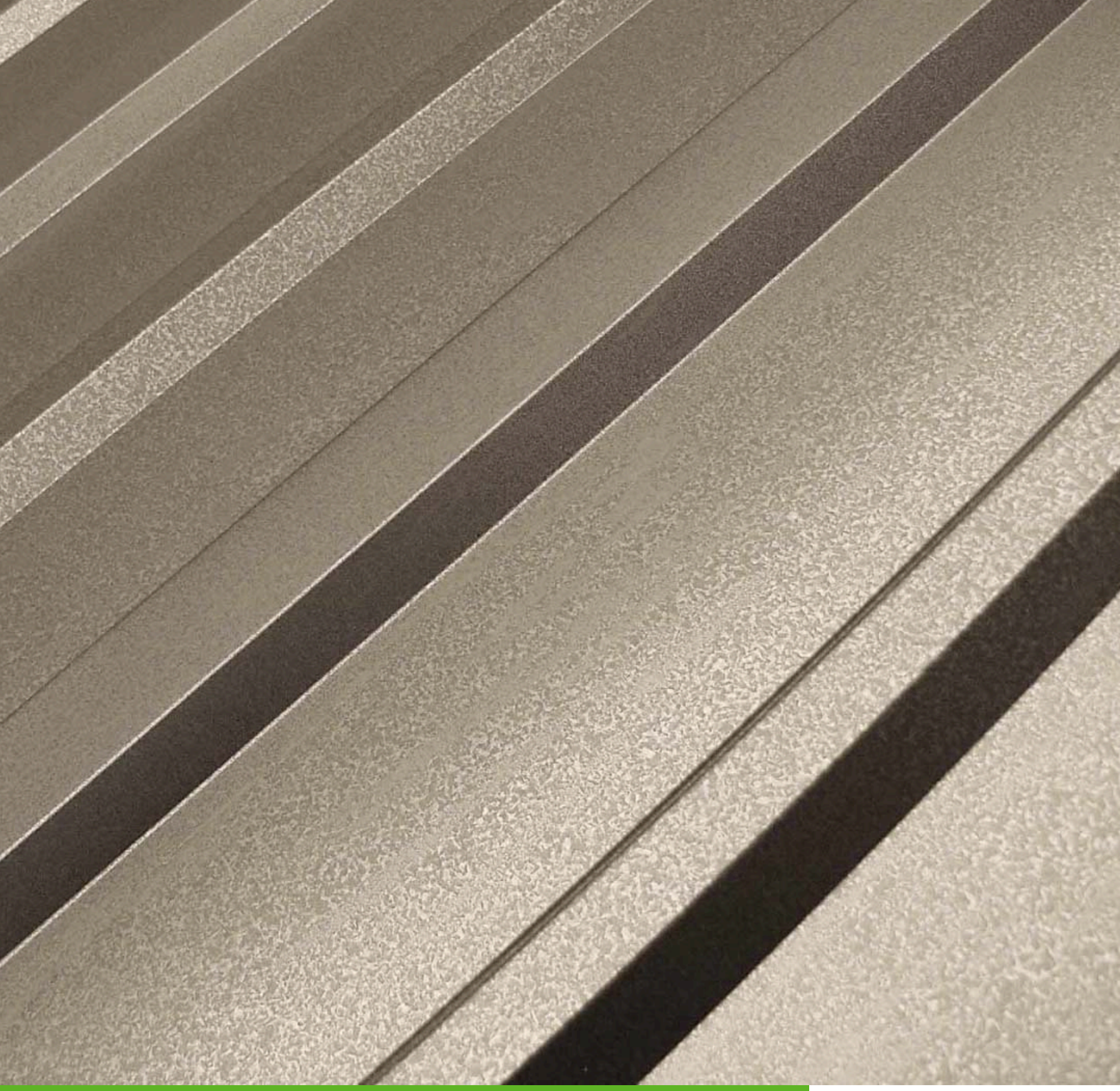


### ◄ Improved fire-rated drywall

Temple-Inland has introduced a new, improved Type TG-C formula for its fire-rated gypsum wallboard. While offering the same finishing and performance properties as its full line of wallboard products, Temple-Inland's new premium TG-C wallboard is UL approved for almost twice as many applications. Manufactured in ½" and ⅝" thicknesses, a 4" width, and lengths from 8' to 14', the product also features traditional tapered edges. Temple-Inland, Tyler, Texas. www.templeinland.com **CIRCLE 234**

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# Product Briefs

**▼ Biometric access control**

Marks USA introduces its IQue biometric fingerprint lockset. The combination of the stand-alone IQue lockset with a biometric fingerprint reader with RF (radio frequency) transmission offers security access that can't be lost, stolen, or duplicated to verify a person's identity. Use of RF transmission also allows for an installation that will not compromise the fire rating of the door system. The IQue biometric fingerprint lockset allows up to 90 users and a 1,000 event audit trail, as well as easy installation and secure wireless transmission to the lock. Marks USA, Amityville, N.Y.



www.marksusa.com

**CIRCLE 235**



**▲ Modern German glass partitions**

Sprinz manufactures and markets glass products for interior design and architecture, including swimming pool and wellness applications. The company's ceramic-screen-printing process (above left) is offered as a rugged and versatile alternative to sandblasted or etched glass. Together with designer Matteo Thun, Sprinz has created a partition wall system (right) for wellness and sanitary applications. The "Basic" model is produced from .39"-thick toughened safety glass, while the "Modern" model has high-gloss chrome mirror glass on the inside and matte chrome with a screen-printed finish on the outside. Both models can be used to produce partition walls, individual cubicles, and rows of cubicles. Sprinz, Ravensburg, Germany. www.glas-sprinz.de **CIRCLE 236**

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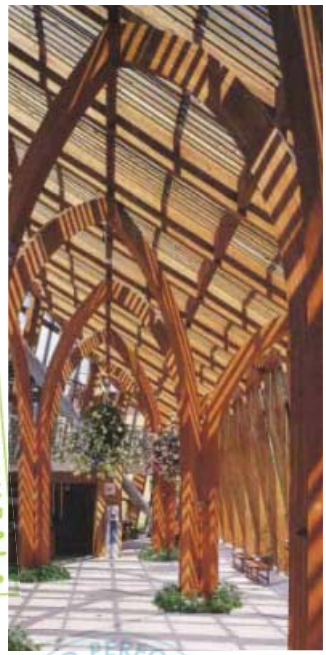
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# Product Literature













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### Shower-panel brochure

A new, 10-page, full-color brochure showcases the Pharo Showerpanel Lift from Hansgrohe. Inside are numerous color photographs of the shower panel as well as line drawings and charts that feature descriptions and dimensional data. Hansgrohe, Alpharetta, Ga. www.hansgrohe-usa.com **CIRCLE 237**

### Lighting inventions

Nova Lighting has introduced a 36-page catalog featuring color images and information on many of its new designs, including a wide variety of Arc Lamps, a lighting category Nova invented years ago for the American market. Nova Lighting, Huntington Park, Calif. www.novalamps.com **CIRCLE 238**

### Garden design catalog

Arcadian Garden Features' expanded 40-page catalog is the most comprehensive one ever produced by the company. It details the entire range of Arcadian garden design products, from pebble pools and self-contained fountains to garden furniture, ornaments, and paving. Haddonstone, Bellmawr, N.J. www.arcadian.biz **CIRCLE 239**

### NEW SITES FOR CYBERSURFING

Site for Spanish stone architectural elements, tiles, and slabs is available in Spanish, French, English, and German.



**www.arriaga-marmoles.com**

At Designtex's new site, visitors can learn about upholstery, wall coverings, drapery, panel fabrics, and other new offerings from the company. **www.dtex.com**

Online tool allows radiant-floor customers to draw/submit plans electronically for a price quote. **www.warmlyyours.com**

### Restoration mortar brochure

Cathedral Stone Products has produced a new eight-page color brochure detailing information on the entire line of Jahn Restoration Mortars. Each Jahn mortar formulation has been engineered for use with specific substrates such as sandstone, limestone, terra-cotta, stucco, concrete, marble, and brick. Cathedral Stone Products, Hanover, Md. www.cathedralstone.com **CIRCLE 240**


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# Product Literature




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### Molded-millwork catalog

Fypon has introduced a new product catalog featuring 750 new pieces, including 76 louvers, 52 window crossheads, 46 window-crosshead arches, 105 decorative brackets, 66 dentil blocks, 39 ceiling medallions, and 154 profiles of molding options, bringing the full line to more than 6,000 items. Fypon, Archbold, Ohio. www.fypon.com **CIRCLE 241**

### Cabinetry design brochure

The new *Marqué II* style guide from Quality Custom Cabinetry presents 15 pages of custom cabinetry design options. More than 60 photos depict cabinetry styles, wood species, and painted and stained finishes. Vignette photos include kitchen, bath, and custom living areas. Also shown are some of the available storage solutions, intricate detail options, and architectural elements. Quality Custom Cabinetry, New Holland, Pa. www.qcc.com **CIRCLE 242**

### Conservation education

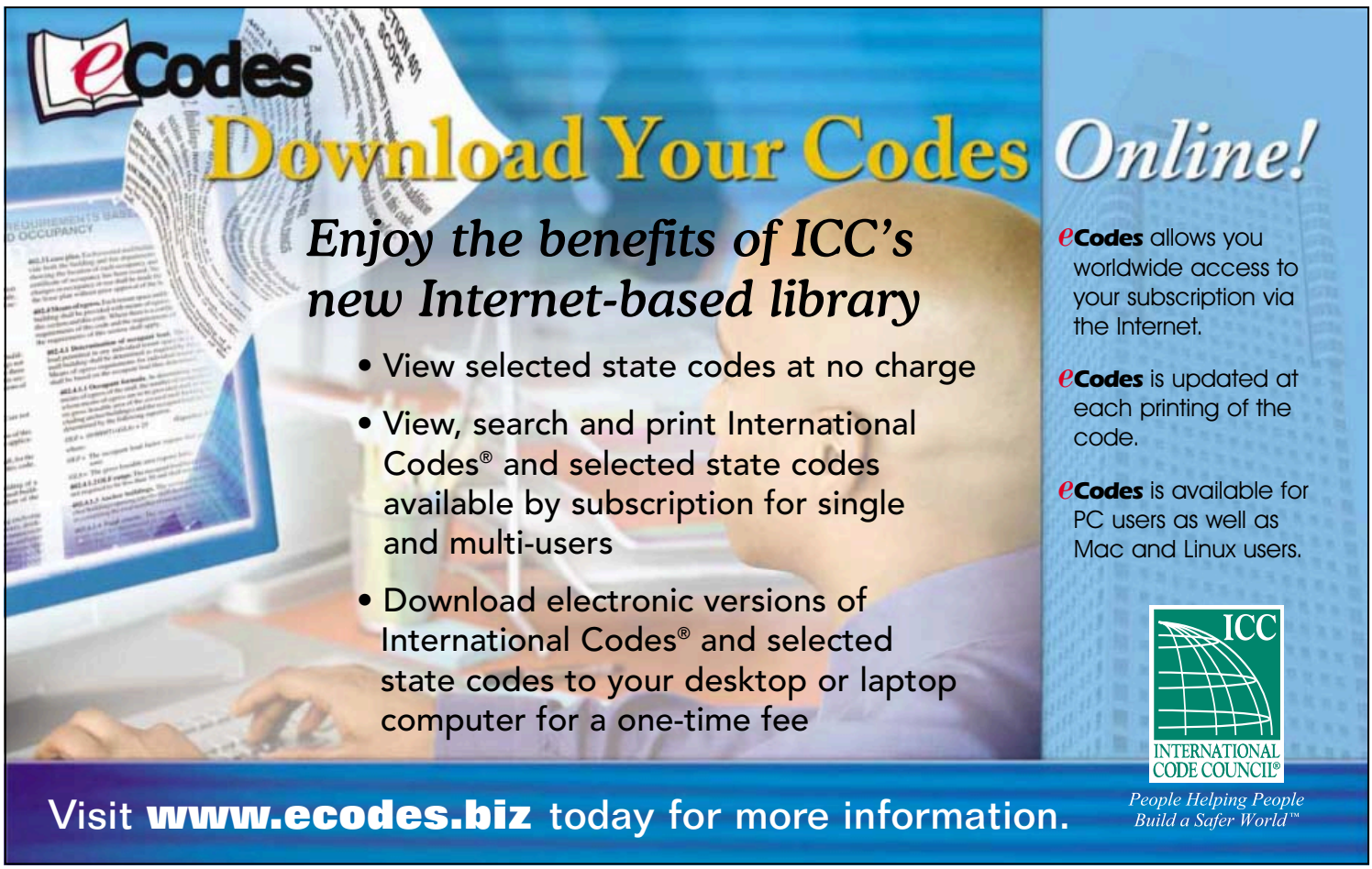
Sloan Valve explains how educational facilities can conserve water and reduce operating costs in the new brochure *How Green is Your School's Plumbing?* The brochure highlights Sloan's full line of water conservation plumbing systems, including its sensor faucets, Flushometers, and Waterfree Urinals, which are suitable for all types of school facilities. Sloan Valve, Franklin Park, Ill. www.sloanvalve.com **CIRCLE 243**

### Leather sample card

Harden Contract now offers a new *Leather Collection Sample Card*. The four-page, portfolio-style brochure presents generous 1½"-square swatches of Harden's own collection of standard and premium American leather for seating upholstery and top inserts on desks, tables, credenzas, and other case goods. Harden Contract, McConnellsville, New York. www.hardencontract.com **CIRCLE 244**

### Awning fabric folder

The new *Color Folder* from Glen Raven Custom Fabrics showcases the full line of Sunbrella-brand awning fabrics, including several new additions this season. Glen Raven Custom Fabrics, Glen Raven, N.C. www.sunbrella.com **CIRCLE 245**


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# Product Literature




### Sheet and film for signage

Sheffield Plastics has released an eight-page color brochure describing its full line of polycarbonate sheet and film products for tough outdoor sign applications. Sheffield's Makrolon signage products are produced exclusively with Makrolon polycarbonate resin from Bayer Corporation. A detailed chart delineates the physical, optical, mechanical, thermal, and flammability properties of Makrolon, and another chart details available sizes, colors, and surface textures. Sheffield Plastics, Sheffield, Mass. www.sheffieldplastics.com **CIRCLE 246**

### Specialty flooring catalog

Johnsonite has released an updated version of the *Johnsonite Story*, a full catalog of the company's product offerings. The catalog helps define high-performance environments, explains flooring's ability to play a role in these environments, and details the benefits of each Johnsonite product solution. The Johnsonite specialty flooring line ranges from rubber flooring and stair-well solutions to wall base collections and finishing accessories. Johnsonite, Chagrin Falls, Ohio. www.johnsonite.com **CIRCLE 248**

### Lighting magazine

Prescolite has announced the newest issue of *illume*, the company's magazine of architectural lighting ideas and applications. Prescolite premiered the magazine in 2001 as a full-scale periodical for the commercial lighting specifications industry. The 32-page journal includes pullout inserts for placement in Prescolite's spec binders. Hubbell Lighting, Spartanburg, S.C. www.prescolite.com **CIRCLE 247**

### Architectural grilles/screens

The Airolite Company offers a four-page brochure detailing its line of architectural grilles and screens. Airolite custom designs its grilles and screens to function as architectural accents or entire facades. The new brochure features a grille specification guide and detailed drawings of several grille designs. Airolite, Marietta, Ohio. www.airolite.com **CIRCLE 249**

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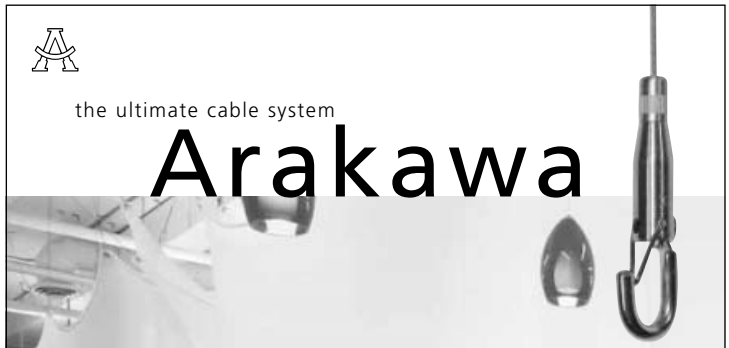
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# Dates & Events

## New & Upcoming Exhibitions

**Ant Farm 1968–1978**
**Karlsruhe, Germany**
*May 1–July 15, 2005*
This exhibition tracks the seminal underground architects through drawings, posters, mail art, and video. Organized by the Berkeley Art Museum, the show is at Zentrum fur Kunst und Mediaentechnologie and will move to the Architecture Gallery at Yale University, New Haven, September 15–December 12, 2005. Call 49 0 721/8100-1007 or visit www.zkm.de.

**Chicago Bridge**
**Los Angeles**
*May 6–June 10, 2005*
This exhibition focuses on the schematic design, elements of the design development, and construction of Frank O. Gehry's BP pedestrian bridge in Chicago's Millennium Park. At UCLA Department of Architecture and Urban Design Perloff Gallery. Call 310/267-4704 or visit www.aud.ucla.edu.

**1945: Creativity in Crisis**
**Chicago**
*May 7, 2005–May 26, 2006*
Consisting of approximately 100 architectural drawings, models, artifacts, furnishings, and photographs, this exhibition focuses on American architecture and design of the 1940s. In Gallery 227 at the Art Institute of Chicago. Call 312/443-3600 or visit www.artic.edu/aic.

**Scents of Purpose: Artists Interpret the Spice Box**
**San Francisco**
*May 8–September 5, 2005*
More than 80 leading local and national artists and architects were invited to creatively explore the meaning and form of the traditional Jewish spice box (or *besamin*), used in the Sabbath prayer service. Participants in this art exhibition include renowned architects Daniel Libeskind, Chong Partners Architecture in association with Berkeley Mills & Earth Resources, Robert A.M. Stern, C. David Robinson, and Brad Cloepfil of Allied Works Architecture. At the Contemporary Jewish Museum. Call 415/334-8800 or visit www.cjm.org.

**The Initiated Eye: Secrets, Symbols, Freemasonry, and the Architecture of Washington, D.C.**
**Washington, D.C.**
*May 18–December 31, 2005*
An original exhibition focusing specifically on the interesting and significant contributions of Freemasons to the design and architecture of Washington, D.C. At the Octagon. Call 202/638-3221 or visit www.theoctagon.org.

**Annual Art and Structure Benefit Exhibition**
**New York City**
*May 19, 2005*
This benefit challenges teams of artists and designers to create a structural work of art that responds to a charity-related theme. The theme, "Making Time," investigates the experience of a life not governed by the clock. All proceeds will benefit the Common Ground Community, a nonprofit housing and development organization committed to stamping out homelessness. For further information and tickets, call 212/471-0885.

**2005 Wright Plus Housewalk**
**Oak Park, Ill.**
*May 21, 2005*
Visitors will explore one of the richest periods of American architecture by touring homes designed by Frank Lloyd Wright and renowned contemporaries. Located 15 minutes from downtown Chicago, Oak Park was home to Frank Lloyd Wright for 20 years and offers the world's largest concentration of Wright-designed structures. For more information, call 708/848-3440 or visit www.wrightplus.org.

**Vanishing Point**
**Columbus, Ohio**
*May 21–August 14, 2005*
This exhibition features photographs, paintings, drawings, video, and mixed-media installations that explore the aesthetics of contemporary urban "nonspaces." These ubiquitous public realms—convenience stores, hotel lobbies, shopping malls, airport terminals, parking lots—are often considered anonymous, banal, or otherwise socially and culturally insignificant.




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# Dates & Events

Rather than objectively documenting these spaces, the artists in *Vanishing Point* interpret them by focusing on their experiential and atmospheric qualities. At the Belmont Building, Wexner Center for the Arts. Call 614/292-0330 or visit www.wexarts.org.

**2nd International Architecture Biennale Rotterdam: The Flood**
**Rotterdam, the Netherlands**
*May 26–June 26, 2005*
With the exhibitions *The Water City*, *Mare Nostrum*, *Polders*, *Three Bays*, and *Flow*, the Biennale will spotlight the relation between water and architecture in the Netherlands and around the world. In addition, the Biennale will feature numerous conferences, lectures, excursions, a film program, and a city program. At Las Palmas and the Netherlands Architecture Institute. For further information, visit www.biennalerotterdam.nl.

**Policy and Design for Housing Beyond the Minimum: Lessons of the Urban Development Corporation 1968–1975**
**New York City**
*June 10–September 10, 2005*
In response to the lack of housing units being built for families of limited income, a concerned group of architects, planners, policy makers, public advocates, and environmental psychologists will take a look at the situation by presenting an evaluation of the housing produced by the New York State Urban Development Corporation. The exhibition will use plans and photographs of a sample of projects around New York State that demonstrate housing of differing types: urban and suburban; mixed income; high-rise and low-rise; varying densities; with various building materials and technologies. At the Center for Architecture. Visit www.udchousing.org.

**Jewish Washington: Scrapbook of an American Community**
**Washington, D.C.**
*June 24, 2005–January 8, 2006*
Scrapbooks, historical photographs, business ephemera, architectural artifacts, and other items convey the story of the local Jewish community as it grew along 7th Street into neighborhoods across the city. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

**2005 Serpentine Gallery Pavilion Program**
**London**
*Summer 2005*
Portuguese Pritzker Prize–winning architect Alvaro Siza and his long-time collaborator, the distinguished architect Eduardo Souto de Mouro, will design the next Serpentine Gallery Pavilion. Since the commission was launched in 2000, it has resulted in four landmark temporary structures. At the Serpentine Gallery. Call 020/7402-6075 or visit www.serpentinegallery.org.

## Ongoing Exhibitions

**Mexico City Dialogues: New Architectural Practices**
**New York City**
*Through May 7, 2005*
The first international exhibition organized by the Center for Architecture, *Mexico City Dialogues* is part of mexicoNOW, a citywide festival celebrating contemporary Mexican culture. Jose Castillo, a Mexico City–based architect, educator, and associate editor of *Arquine* magazine, serves as guest curator of the exhibition. The exhibition examines the changing fabric of Mexico City through 17 selected projects by young Mexican architects. At the Center for Architecture. Call 212/683-0023 or visit www.aiany.org.

**un/spoken (SPACES)**
**Charleston, S.C.**
*Through May 8, 2005*
Eighteenth- and 19th-century paintings of Charleston not only reinforce the city's significance as a prominent colonial and antebellum metropolis, as well as tourist destination of today, but also present subtle and often not-so-subtle distinctions between class, wealth, and racial status. *un/spoken (SPACES): Inside and Outside the Boundaries of Class, Race, and Space* investigates the complex relationships between these variables. Ray Huff and Mario Gooden of Huff Gooden Architects in Charleston approach the Main Gallery of the Gibbes as a multidimensional landscape in which selected works from the permanent collection are recontextualized through a manipulation of spatial boundaries and interpretive texts. At the Gibbes Museum of Art. Call 843/722-2706 or visit www.gibbesmuseum.org.

**Building the Future of Learning**
**Zurich**
*Through May 11, 2005*
An exhibition of twelve projects for a learning cen-

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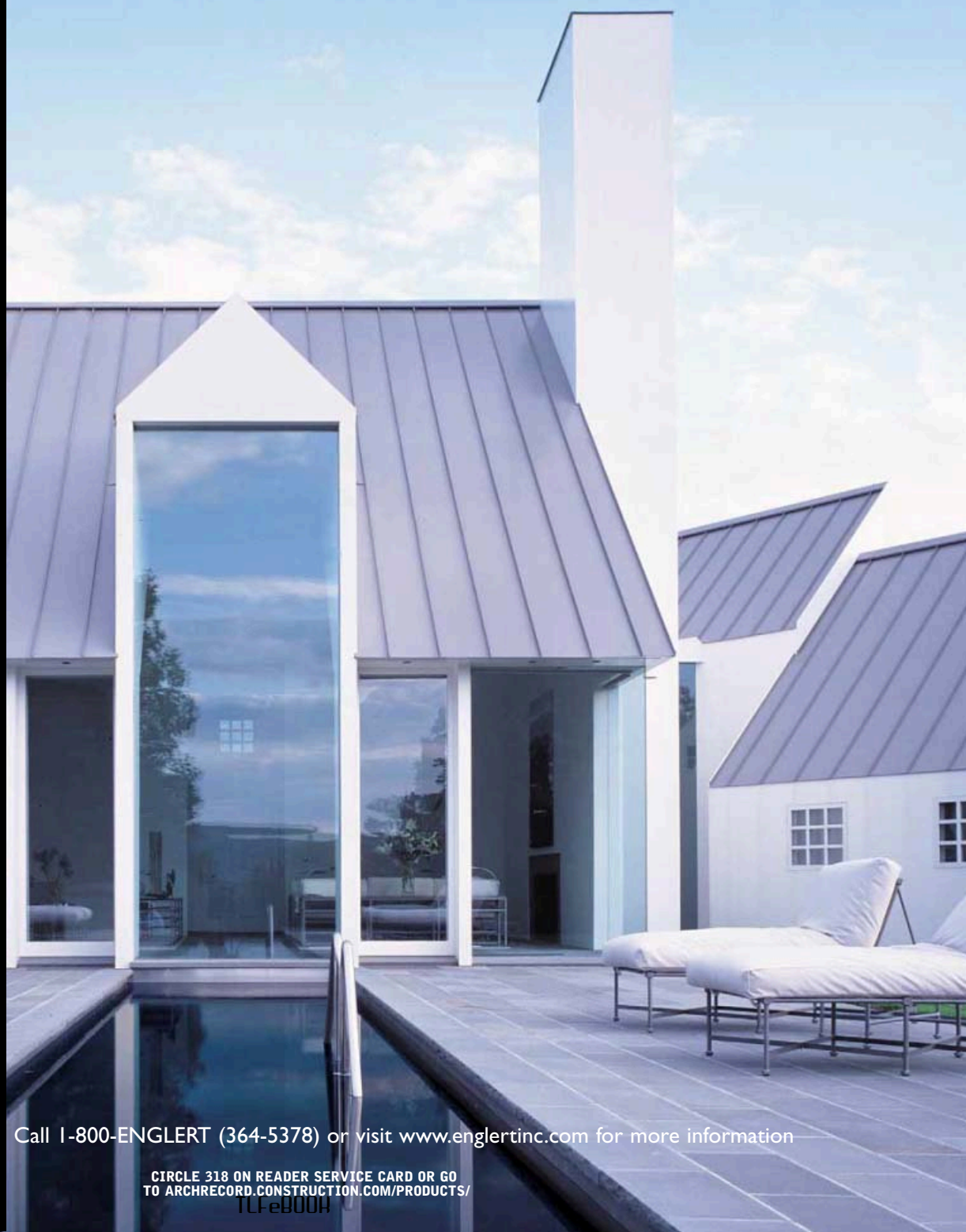
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# Dates & Events

ter at EPF Lausanne. At the Swiss Federal Institute of Technology Zurich. Call 411/633-2963 or visit www.ausstellungen.gta.arch.ethz.ch.

**Groundswell: Constructing the Contemporary Landscape**
**New York City**
*Through May 16, 2005*
This exhibition presents 23 landscape design projects that reclaim and transform urban spaces—many derelict and in need of rehabilitation—into public parks and gardens. *Groundswell* features examples of the new artistic richness and critical debate in the design of public spaces, from small urban plazas to large parks for post-industrial sites to long-range plans for entire urban sectors. At the Museum of Modern Art. Call 212/708-9431 or visit www.moma.org.

**Peter Eisenman: Barefoot on White-Hot Walls**
**Vienna**
*Through May 22, 2005*
This show encompasses all aspects of Eisenman's oeuvre—Eisenman as architect, theoretician, writer, teacher—with emphasis on his most recent projects. At the MAK Exhibition Hall. Call 43-1/712-80 00 or visit www.MAK.at.

**Dennis Oppenheim: Indoors, Outdoors**
**Bartlesville, Okla.**
*Through May 22, 2005*
Known early in his career for his earthwork, kinetic, and conceptual art, the artist has recently turned to the relationship between sculpture and architecture. The exhibition brings together models for some 30 of his large-scale projects, along with design drawings and on-site photographs of completed works. At the Price Tower Arts Center, a tall mixed-use tower designed by Frank Lloyd Wright, which in itself is a masterpiece. Visit www.pricetower.org.

**Josh Owen: big ideas/small packages**
**Philadelphia**
*Through May 27, 2005*
In this exhibition, industrial and graphic designer Josh Owen will be showing newly designed products in a series of vignettes throughout 222gallery. The opening coincided with the launch of DesignPhiladelphia, a 17 day festival committed to advancing the public's awareness of design exploration and innovation in or about the city of Philadelphia. Visit www.designphiladelphia.org.

**New York Now**
**New York City**
*Through May 28, 2005*
A panoramic snapshot of the activity of New York architects at this moment, this exhibition showcases the scope and quality of the projects being created today by AIA New York Chapter members. At the Center for Architecture. Call 212/683-0023 or visit www.aiany.org.

**Gunther Dominig: Structures That Fit My Nature**
**West Hollywood**
*Through June 26, 2005*
This exhibition focuses on two key projects by the Austrian contemporary architect: the Steinways (Stone House), the architect's own home, still in process; and the prize-winning Nuremberg Documentation Center (Dokumentationszentrum), completed in 2001, which is a historical archive that transforms Albert Speer's Nazi coliseum into a memorial. At MAK Center at the Schindler House. Call 323/651-1510 or visit www.makcenter.org.



**Carlos Garaicoa**
**Los Angeles**
*Through June 12, 2005*
The first U.S. museum survey of recent work by Cuban artist Carlos Garaicoa, who addresses Cuba's politics and ideologies through the examination of Modern architecture. At the Museum of Contemporary Art (MOCA) Pacific Design Center. Call 213/626-6222 or visit www.moca.org.

**Constructing Stata: Photographs of Richard Sobol**
**Cambridge, Mass.**
*Through June 15, 2005*
A collection of unpublished photographs captures the construction process that brought MIT and the world the Frank Gehry–designed Stata Center. Through the works of Boston-based photographer Richard Sobol, visitors experience up close how this building came together. At MIT Museum's Compton Gallery. Call 617/253-4444 or visit www.web.mit.edu/museum.

**Changing Streetscapes: New Architecture and Open Space in Harlem**
**New York City**
*Through June 30, 2005*

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This exhibition highlights recent construction and development in five areas: housing, commercial development, cultural and institutional projects, landscape, and planning. At the City College of New York (NAC Building). Call 212/650-7271 or visit www.ccny.cuny.edu/library/exhibits.html.

**Blobjects & Beyond:**
**The New Fluidity in Design**
**San Jose, Calif.**
*Through July 10, 2005*
Inspired by the idea that blobjects (blobby objects) have become defining products of the new millennium—often considered "cool looking" and compellingly curvaceous—the exhibition showcases the talents of some of today's hottest designers. A rich range of product, furniture, graphic, media, and architectural work from across the globe will be featured. At the San Jose Museum of Art. Call 408/294-2787 or visit www.SanJoseMuseumofArt.org.

**The High Line**
**New York City**
*Through July 18, 2005*
An exhibition of new High Line design work by the team of Field Operations and Diller Scofidio + Renfro. At the Museum of Modern Art. Visit www.thehighline.org.

**Heather Allen: Architectural Textiles**
**Washington, D.C.**
*Through July 29, 2005*
This exhibition features 30 of Allen's hand-woven and painted rugs and wall textiles. The architectural imagery represents Allen's exploration of interior space and emotional color. At the Octagon, the museum of the American Architectural Foundation. Call 202/638-3221 or visit www.theoctagon.org.

**Chicago Architecture Foundation Tours**
**Chicago**
*Through March 2006*
Led by trained volunteer docents, these acclaimed tours explore the architecture of the Chicago area via bus, boat, train, walking, or Segway. For descriptions of all tours, visit www.architecture.org/tours.

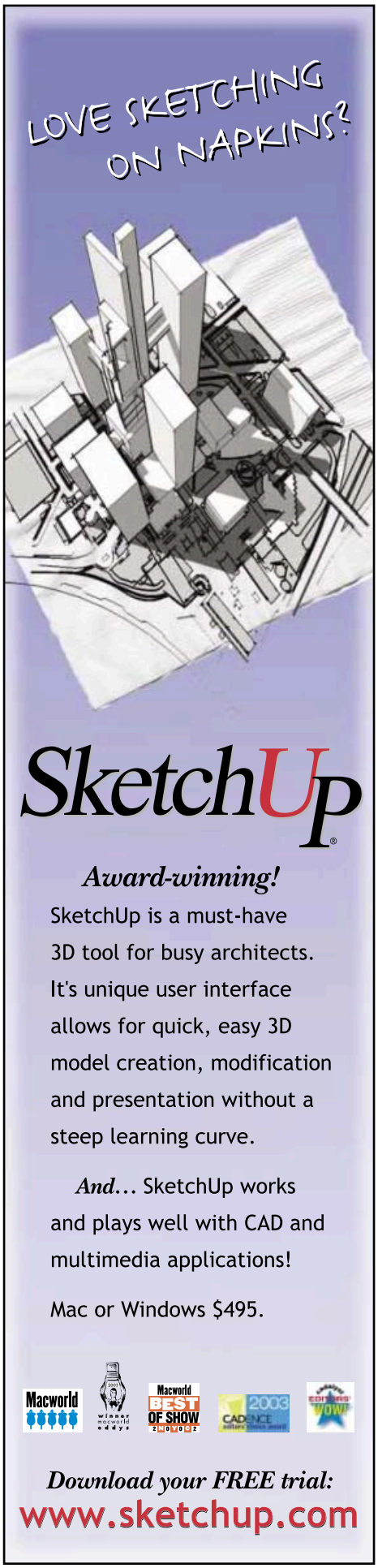
**Worldview**
*Long-term*
Worldview was started by the Architectural League in 2001 as a way of using the Web to create a forum for the presentation of new work in architecture and urbanism in cities around the world that are often overlooked in the mainstream architectural press. *Worldview: Oslo* is the third in an ongoing series of Web reports on architecture and urbanism in cities around the world. Other cities in the series are Dhaka and Caracas, all of which can be accessed at www.worldviewcities.org.

**454 Projects for Paris 2012**
**Paris**
*Long-term*
Fixed or mobile structures, inflatable architectures, monoliths, monumental sculptures, observation towers, scaffoldings, giant stairways, ramps and stairs, fluorescent ring compositions, stretched canvas towers, a diversion of cranes, a forest of urban periscopes: 454 projects from over 80 countries, for the realization of the Olympic Landmark in Paris will be on exhibition at the Pavillon de l'Arsenal, the center for information, documentation, and exhibition for urban planning and architecture of the City of Paris. Call 01 42-76-33-97 or visit www.pavillon-arsenal.com.

**Washington: Symbol and City**
**Washington, D.C.**
*Long-term*
This exhibition examines the nation's capital from its earliest city plans and sometimes haphazard development, to the origins of its distinctive monuments and the emergence of vibrant neighborhoods beyond the National Mall. Featuring large-scale touchable models of five of the capital city's architectural icons—the White House, the Capitol, the Washington Monument, and the Lincoln and Jefferson Memorials—the exhibition displays maps, drawings, artifacts, videos, and photographs. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

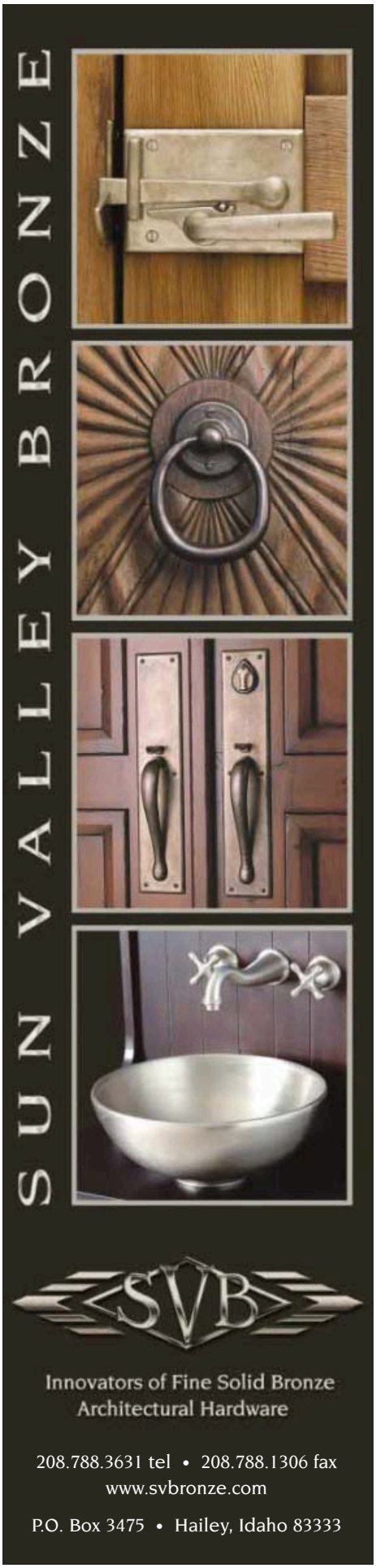
## Lectures, Conferences, and Symposia

**Symposium: Private "Public" Spaces—**
**A Stimulus for Urban Revitalization**
**Washington, D.C.**
*May 2, 2005*
Privately developed open spaces such as plazas, atriums, and parks are underappreciated catalysts for urban revitalization. Jerold Kayden, a Harvard Graduate School of Design professor, will analyze the impact of such spaces, with an emphasis on New York City. He will join Andrew

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# Dates & Events

Altman, chief executive of the Anacostia Waterfront Corporation, to discuss other cities' experiences with privately financed public spaces. Paul Farmer, executive director and C.E.O. of the American Planning Association, will moderate the program. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

**Coverings 2005**
**Orlando**
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The most comprehensive tile and stone marketplace in the Americas, with more than 29,000 industry professionals from around the world expected to meet 1,000 exhibitors spotlighting new products, trends, materials, distribution, installation, and more. At the Orange County Convention Center. Call 703/683-8500 or visit www.coverings.com.

**RAIC Festival of Architecture: Architecture, Art and Urban Design—Celebrating the City**
**Edmonton, Alberta**
*May 4–7, 2005*
The festival is an annual event that takes place in a different Canadian city each year offering delegates a chance to exchange ideas and attend credited professional development courses, as well as listen to some of the professions' most forward thinkers. The Winspear Centre, City Hall, the Citadel Theatre, and the Shaw Conference Center will provide venues for lectures, exhibitions, and special events. Visit www.raicfestival2005.ca.

**FreshForum2**
**Houston**
*May 4, 2005*
FreshForum2 invites the public to view, party-style, a free exhibition of the Rice Design Alliance (RDA) Partners' recent work as emerging design professionals. In the gallery space of Intexture Architects. Visit www.rda.rice.edu.

**Lecture: Christiane Crasemann Collins**
**New York City**
*May 5, 2005*
Christiane Crasemann Collins is a historian of 20th-century and contemporary architecture and city planning, specializing in Central Europe and the Americas. She has lectured at academic institutions in the United States and abroad, and is author of *Werner Hegemann and the Search for Universal Urbanism* and coauthor of *Camillo Sitte: The Birth of Modern City Planning*. At the Bard Graduate Center. Call 212/501-3011 or visit www.bgc.bard.edu.

**Sustainable Arkansas 2005: Rethinking Site, Water, Energy & Materials**
**Little Rock**
*May 5, 2005*
A full-day conference and trade show featuring speaker Dr. David Suzuki, a world-renowned scientist and environmentalist with a mission to build a clean, competitive economy that does not threaten natural resources. Presented by the U.S. Green Building Council (USGBC) at the Statehouse Convention Center. Visit www.sustainablearkansas.com.

**The Society for Marketing Professional Services (SMPS): Professional Development**
**New York City**
*May 6, 2005*
Cosponsored with AIANY, this half-day workshop is entitled "Leads and Targets: Business Development Tactics to Help Your Firm Grow." At the Center for Architecture. Call 212/921-0061.

**Lecture: SHoP/Sharples Holden Pasquarelli**
**Washington, D.C.**
*May 6, 2005*
Founded in 1996, SHoP has become widely recognized for combining digital expertise, including three-dimensional form generation and rapid prototyping, with model building to arrive at original and buildable solutions. One of five principals, Greg Pasquarelli will discuss the firm's logic-based design strategies, which masterfully reconcile cutting-edge design with value engineering. The firm's projects include an academic building for New York's Fashion Institute of Technology, the master plan for the East River Waterfront Development, and several buildings in Mitchell Park on Long Island. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

**Brooklyn Designs 2005**
**Brooklyn**
*May 6–8, 2005*
The show jury, which includes prominent designers as well as representatives from *Interior Design Magazine*, *Metropolitan Home*

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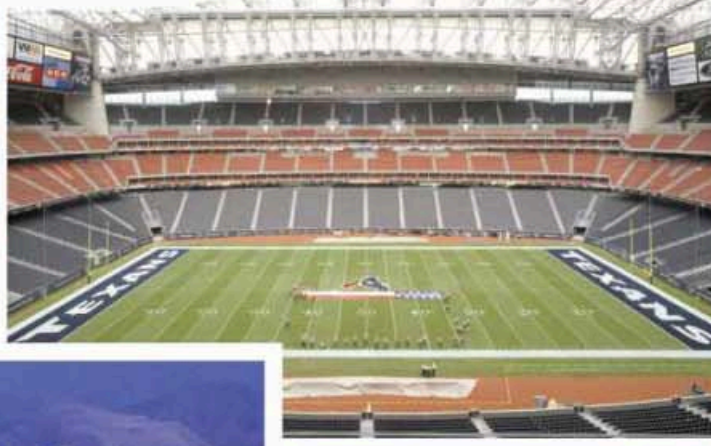
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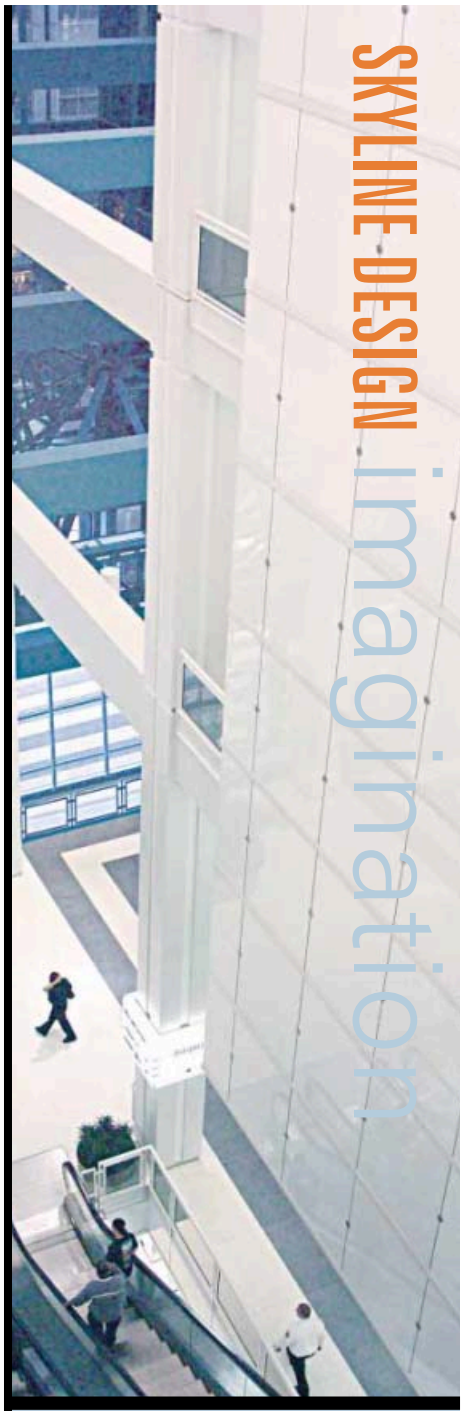
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**Cool Roofing ... Cutting Through the Glare**
**Atlanta**
*May 12–13, 2005*
The Roof Consultants Institute Foundation (RCIF) presents a symposium focusing on evolving philosophies concerning the most effective methods to address "cool roofing." at the Hyatt Regency Hotel. Call 800/828-1902 or visit www.rci-online.org.

**Retail Lighting Solutions**
**Peachtree City, Ga.**
*May 12–13, 2005*
A two-day workshop to explore light from the designer's perspective and earn continuing education credit from Cooper Lighting's The Source, a leading lighting educational facility. Call 770/486-4680 or visit www.cooperlighting.com/education for further information on this or other workshops.

**Malfatto: Imperfect Design for a Better World**
**New York City**
*May 13, 2005*
This one-day symposium will explore a current cultural phenomenon: the movement of consumers away from the type of clean, supremely functional aesthetic that only industrialization could realize, toward unique, sensual objects that make explicit the human origins of their manufacture. During ICFF at Tishman Auditorium. Call 212/842-2047.

**ICFF 2005**
**New York City**
*May 14–17, 2005*
The International Contemporary Furniture Fair will be held at the Javits Convention Center. For further information, visit www.icff.com.

**I Saloni Worldwide New York**
**New York City**
*May 14–17, 2005*
I Saloni Worldwide New York will feature a wide range of furnishings of the most innovative contemporary designs produced by Italy's most important manufacturers. More than 60 exhibitors, 12,000 visitors, and 200 journalists are expected to attend. At New York's Show Piers (90 and 92). for information, visit www.isaloniworldwide.com.

**Lecture: Thom Mayne**
**Los Angeles**
*May 16, 2005*
Thom Mayne is principal of the firm Morphosis in Santa Monica and a professor in the UCLA Department of Architecture and Urban Design. A recipient of numerous awards, his current projects include the 2012 Olympic Village for New York City, San Francisco Federal Building, CALTRANS District Headquarters in Los Angeles, and the University of Cincinnati Student recreation Center. At UCLA Department of Architecture and Urban Design Perloff Hall. Call 310/267-4704 or visit www.aud.ucla.edu.

**Lecture: Eisenmania**
**Vienna**
*May 17–19, 2005*
These lectures are part of the supporting program for the exhibition *Peter Eisenman: Barefoot on White-Hot Walls*. Anthony Vidler, dean, School of Architecture, Cooper Union, New York, will cover the topic "What the Hell is a Diagram," and Andrew Benjamin, professor of Critical Theory in Design and Architecture at the University of Technology, Sydney, will discuss "Displaying Architecture: Eisenman's Exhibition." At MAK Lecture Hall. Call 431 711/36-248 or visit www.MAK.at.

**Lecture: John Ronan**
**Chicago**
*May 18, 2005*
As part of the Graham Foundation's "About Chicago" program series, local architect John Ronan will speak on the recent work of his practice, John Ronan Architects, whose projects range in scale from private residences to large public buildings. In a lecture entitled "Distillation," Ronan focuses on spatial and material investigations within a cultural climate of rapid change and considers aspects specific to the current building climate in Chicago. For information, call 312/787-4071 or visit ww.grahamfoundation.org.

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# Dates & Events

**Twelve Years of Folding: Deleuze and the IT-Revolution in Architecture**
**Vienna**
*May 21, 2005*
A body of writings by Peter Eisenman and the essays collected in Greg Lynn's *Folding in Architecture* prompted a critical turn in architectural thought in the early 1990s. This symposium will consider the sources, contexts, influences, and legacies of these seminal texts. At the MAK Lecture Hall. Call (431)711/36-248 or visit www.MAK.at.

**Architecture and Inspiration: Frank Lloyd Wright's Influences**
**Chicago**
*Through May 21, 2005*
Spring Adult Classes held on Saturdays. At the University of Chicago Gleacher Center. For further information, call 800/997-9689 or visit www.grahamschool.uchicago.edu.

**Lecture: Julia Czerniak**
**Los Angeles**
*May 23, 2005*
Julia Czerniak is an associate professor at Syracuse University School of Architecture, visiting faculty member in the UCLA Department of Architecture and Urban Design for the spring quarter, and principal of Clear in Syracuse, N.Y. She was editor of the publications *CASE: Downsview Park Toronto* (Prestel 2001) and *Large Parks* (Spacemaker Press, 2004). She has lectured widely and has been a guest faculty member at Harvard, the University of Pennsylvania, and the University of Toronto. At UCLA, Department of Architecture and Urban Design, Perloff Hall. Call 310/267-4704 or visit www.aud.ucla.edu.

**Lecture: Factory Built Components and the Modern American House**
**Washington, D.C.**
*May 25, 2005*
The building industry continues to improve its efficiency and capabilities. Jim Petersen, with Pulte Home Sciences, will discuss Pulte's current work with large-scale, factory-built components that can be easily transported and effectively and efficiently incorporated into the residential home. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

**Lecture: Kathryn Gustafson: Moving Horizons**
**Washington, D.C.**
*May 26, 2005*
The landforms designed by landscape architect Kathryn Gustafson, translate concepts that strengthen a site's nature, history, culture, and function. Principal of Gustafson Guthrie Nichol, Seattle, and Gustafson Porter, London, she will discuss her firms' projects, including the Lurie Gardens in Chicago's Millennium Park, the Diana, Princess of Wales Memorial in London, and the recently commissioned Washington Canal Park in Washington, D.C. Call 202/272-2448 or visit www.nbm.org.

**Architects in Troubled Times: Mies and the Making of Modernism**
**Chicago**
*June 4, 2005*
Noted author and historian Franz Schulze will deliver the keynote address at a conference focused on the legacy of Mies van der Rohe, one of the 20th century's most significant architects. At the Illinois Institute of Technology. Call 312/922-3432 or 312/332-5870 for more information.

**Rhode Island Symposium, "Manifesto Challenge: Fostering Resilient Communities"**
**Providence**
*June 5–7, 2005*
This symposium will investigate and seek to understand the transformation processes that are taking place in the cities of Providence and Liverpool. Once successful port cities built on trade in the 19th and early 20th centuries, they both fell into decline by the 1970s. Recently they've seen a remarkable turnaround. The goal is to improve the quality of the questions we ask about urban transformation and to reveal important factors in common between these two cities. Call 703/830-4176 or visit www.rsa-us.org or www.theRSA.org.

**The New York State Urban Development Corporation Symposium Committee**
**New York City**
*June 11, 2005*
The symposium's panels will discuss the UDC initiative, operations, emphasis on design quality and livability, the role of politics, and the future of housing for people of limited income. Panelists will include former UDC principals, housing developers of for-profit and not-for-profit projects, architects and planners,

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# Dates & Events

architectural historians and critics, and current housing officials. In conjunction with the exhibition *Policy and Design for Housing Beyond the Minimum: Lessons of the Urban Development Corporation*. At the Graduate Center, CUNY. Visit www.udchousing.org.

**NeoCon World's Trade Fair**
**Chicago**
*June 13–15, 2005*
An important annual event for professionals who design, plan, or manage any type of commercial or residential interior. With thousands of new product introductions and top industry players, NeoCon includes more than 1,200 showrooms and exhibitors. At the Merchandise Mart. Call 800/677-6278 or visit www.merchandisemart.com.

**Green Cities Mundaneum 2005: IV International Reunion of Architecture**
**San José, Costa Rica**
*June 23–25, 2005*
Mundaneum is dedicated to the discussion of the state of cities, mainly in the developing world, its impact on the natural environment, and of recent world architecture. Organized every two years by the faculty of the Architecture and Urbanism department of Universidad del Diseño, speakers include Jamie Lerner of Curitiba, Brazil, Albert Pope of Rice University, Houston, architects Michael Sorkin and Steven Ehrlich, as well as other experts from Europe and Latin America. For further information visit www.unidis.ac.cr.

**The UIA 2005 Istanbul Congress**
**Istanbul**
*July 3–7, 2005*
The UIA 2005 Istanbul Congress will be organized under the theme of "Cities: Grand Bazaar of Architecture" as a multidimensional event including meetings, conferences, interviews, exhibitions, competitions, tours, an architectural fair, as well as social and cultural activities. Visit www.uia2005istanbul.org for more information.

**Glenn Murcutt International Architecture Master Class**
**Sydney**
*July 10–24, 2005*
Commenced in 2001, participants in the annual master class have included architects, academics, postgraduates, and senior students from around the world. Glenn Murcutt, 2002 Pritzker Prize laureate and visiting professor at many prestigious international universities, leads the master class, a two-week residential studio program which will be held for one week at the Boyd Education Centre "Riverdale" (described as Murcutt's "Master Work") and for the second week at the University of Sydney School of Architecture. Visit www.ozetecture.org.



**CA/BOOM II: The State of Contemporary Design Now**
**Santa Monica, Calif.**
*July 28–31, 2005*
This three-day event showcases contemporary architecture and independent contemporary design. Professionals and design enthusiasts will be exposed to an array of contemporary and non-traditional architecture, interior design, furniture design, and landscape design through a provocative and entertaining mix of gallerylike exhibition, guided home tours, and speaker conferences. At the Santa Monica Civic Auditorium. Call 310/306-6677 or visit www.caboom2.com.

## Competitions

**2005 Summer Faculty Fellowship**
*Deadline: May 4, 2005*
Each year the Boston-based design firm Goody Clancy offers a unique Professional Fellowship to an individual motivated to contribute to and gain experience from the firm. In addition to a $15,000 stipend, the selected fellow will spend the summer at the Boston office and have access to the firm's resources. For further information, call 617/850-6556 or visit www.goodyclancy.com.

**Promosedia International Design Competition: Ideas for Chair Design**
*Deadline: May 6, 2005*
The aim of the competition is to stimulate creative ideas, which must be technically feasible. Submissions are invited that express originality and innovation and that identify the use and function of the chair, giving due consideration to ergonomics, choice of materials, and the requirements of mass production. Call 39/0432-229127 or visit www.www.promosedia.it.

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# Dates & Events

**AIA New England Design Awards**
*Deadline: May 17, 2005*
Any built project of any type anywhere in the world by any New England architect is eligible and any architect anywhere in the world may submit projects built in New England. Visit www.architects.org.

**AIA/LA Restaurant Design Awards**
*Deadline: May 20, 2005*
The first Los Angeles Restaurant Design Awards will recognize edgy, elegant, and functional restaurant design. For information, call AIA/LA at 213/639-0777.

**ANAS International Design Competition**
*Deadline: May 30, 2005*
Three design competitions over two selection phases: a preliminary design of two bridges over the River Arno in Florence; an environmental architectural project for the entrance and exit of the new Mestre Motorway Tunnel in Venice; and a relandscaping along the Salerno-Reggio Calabria Motorway, including a motorwayside museum. Visit www.arcaedizioni.it/anas/.

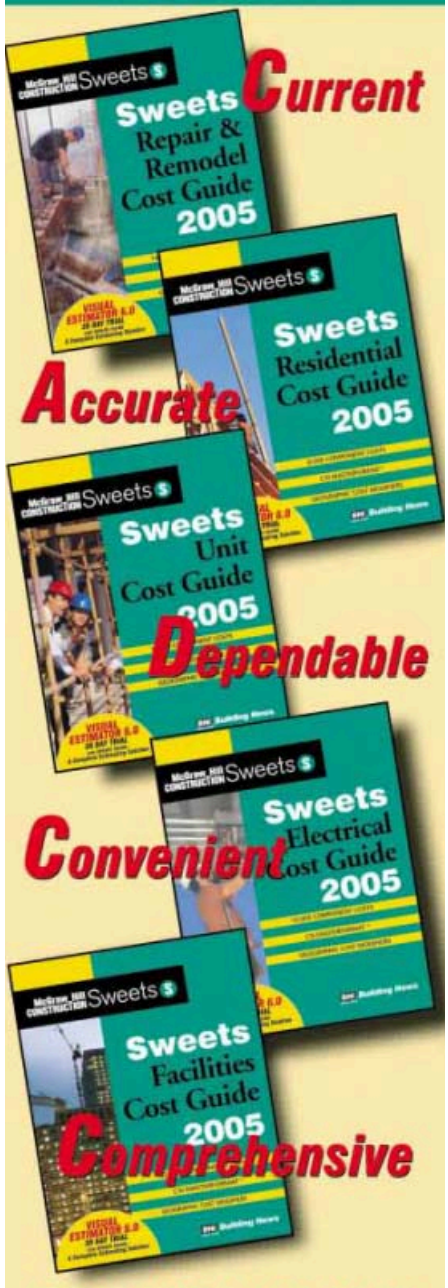
**2005 USGBC Natural Talent Design Competition**
*Deadline: June 10, 2005*
This competition provides an applied learning experience in the principles of integrated design, sustainability, innovation, and social consciousness—all of which are components of the LEED Green Building Rating System. There will be two categories: New Construction and Existing Building. Working with the Boys & Girls Clubs of America the USGBC will select two Boys & Girls Club projects. Visit www.usgbc.org/chapters/emerginggreen.

**John M. Clancy Award for Socially Responsible Housing**
*Deadline: June 13, 2005*
Any public- or private-sector multifamily project anywhere in the U.S. that provides shelter for low- and/or moderate-income residents may be submitted by any individual, community group, or organization anywhere in the world. Visit www.johnclancyaward.org.

**Benjamin Moore HUE Awards**
*Deadline: June 30, 2005*
Architects and designers who incorporate color in innovative and imaginative ways through the use of interior and exterior paints, building materials,

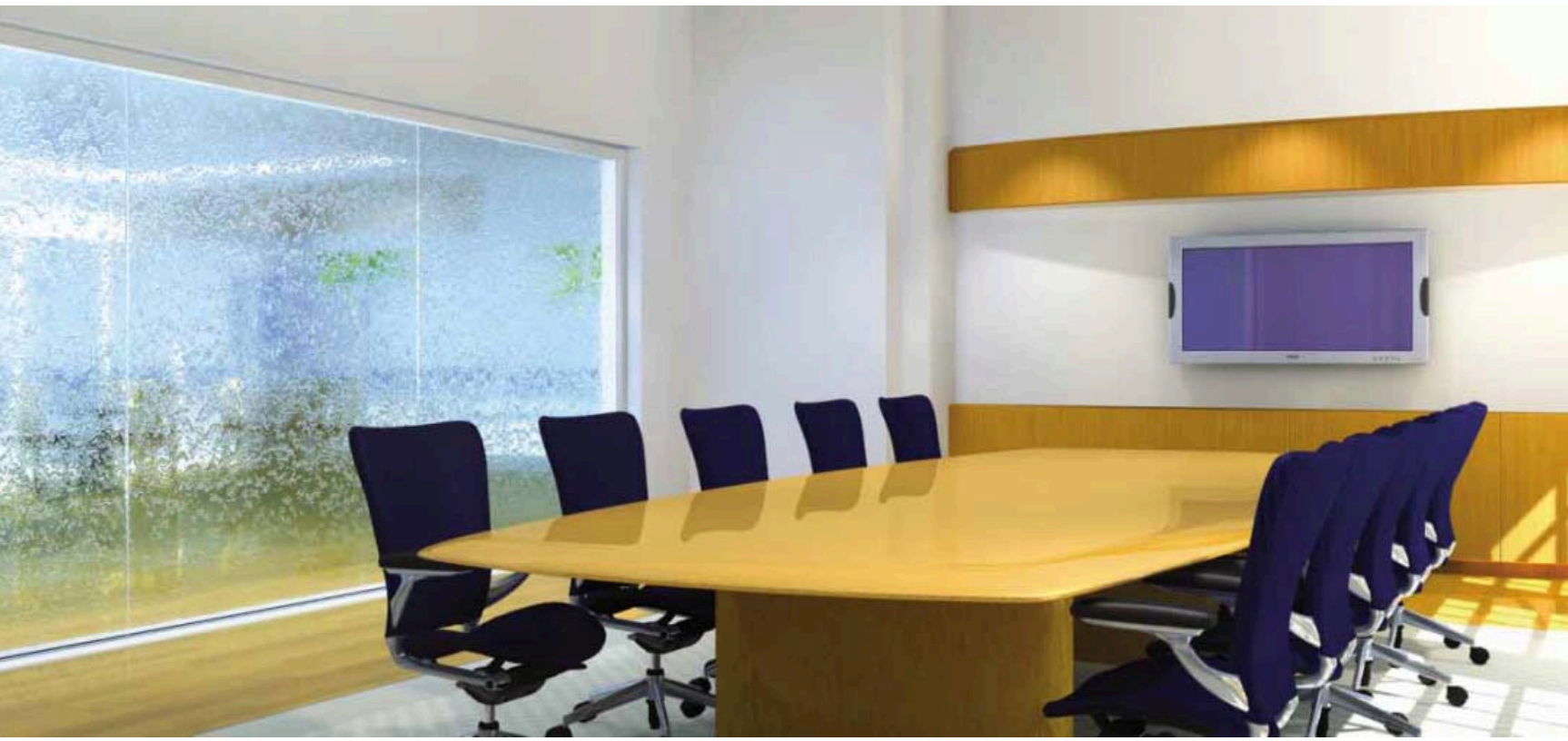
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# Dates & Events

textiles, and other surfaces are being encouraged to enter the first annual Benjamin Moore HUE Awards. Visit www.benjaminmoore.com.

**14th Annual Ermanno Piano Scholarship**
*Deadline: June 30, 2005*
This scholarship was created for recent graduates of architecture to give them the opportunity to continue their education through a six-month internship within the Renzo Piano Building Workshop in Paris. Visit www.rpbw.com.

**Solutia International Design Awards**
*Deadline: June 30, 2005*
Now in its seventh year, the Solutia International Design Awards is a global competition that pays tribute to architects, interior designers, automotive designers, and laminators who have used laminated glass liberally in their design. Entries are being accepted for the awards, which will recognize projects that demonstrate innovative uses of any of Solutia's architectural glazing products. Visit www.vanceva.com/design.

**Vetter Inspired Project (VIP) Awards**
*Deadline: July 1, 2005*
An annual national design contest for architects and custom builders, open to any project completed between January 1, 2002, and June 30, 2005, using Vetter windows and patio doors. Call 800/838-8372 or visit www.vetterwindows.com.

**Shinkenchiku Residential Design Competition 2005**
*Deadline: July 13, 2005*
A call for entries that explore new potential in architecture through the design of "the residence, a place for human dwelling." Two architects, Tadao Ando and Richard Rogers, will serve as judges. For further information, visit www.japan-architect.co.jp/english/5info/topics/skcompe2005/skcompe2005.html.

**The 22nd Antron Fiber Design Award**
*Deadline: September 16, 2005*
This award program recognizes designers who are setting new standards of creativity in commercial interior design through the innovative use of carpet. Visit www.antron.invista.com/designwards.

*E-mail event and competition information two months before event or submission deadline to elisabeth_broome@mcgraw-hill.com.*

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**May 6**
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Gregg Pasquarelli, principal, New York

**May 26**
**Kathryn Gustafson: Moving Horizons**
Kathryn Gustafson, ASLA, principal of Gustafson Guthrie Nichol, Seattle and Gustafson Porter, London

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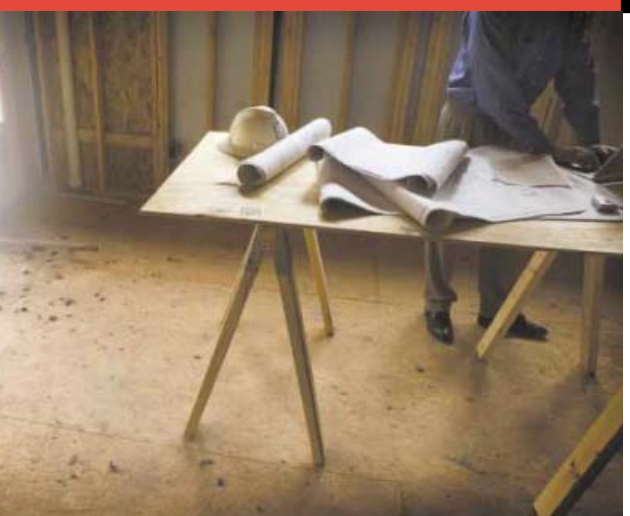

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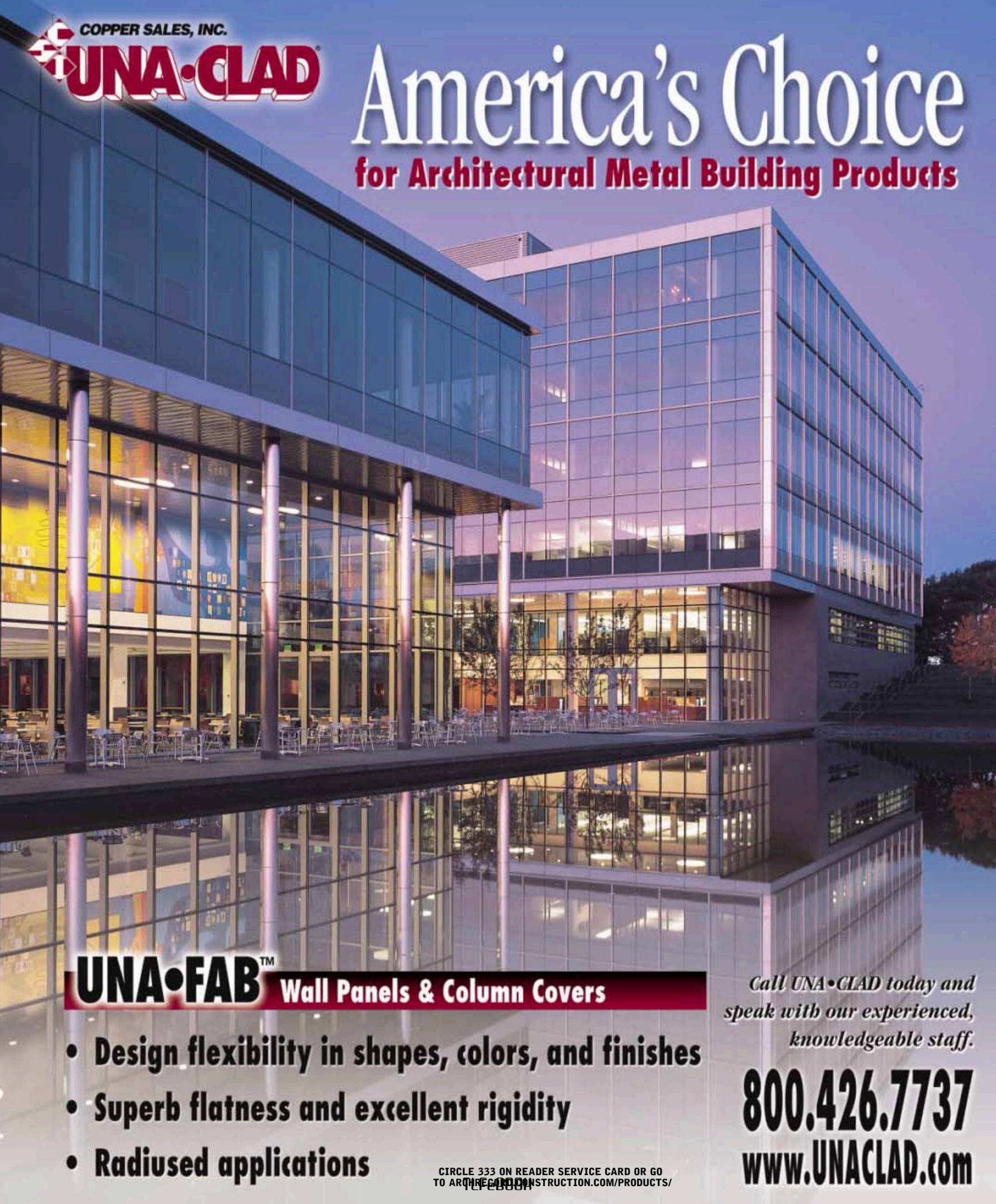
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**PHILIP JOHNSON/Essay by Schulze** *(continued from page 178)*

bined with a ravenous ambition defeated the self-discipline necessary to explore a stylistic approach in depth and thereby to master it. Sometimes he seized upon impressive forms, such as the IDS Tower in Minneapolis (page 179, *6),* Pennzoil Place in Houston (page 180, *8*), or the space frame of the Crystal Cathedral in Garden Grove, California (page 179, *5*). Then, virtually as soon as such concepts struck him, he would abandon them, turning away like an undiscriminating child and delivering himself of bizarre mutations like the Bank of America Center (formerly Republic Bank) of Houston (1984), or that ultimate vulgarity, the multi-use Crescent in Dallas (1985).

Curiously, Johnson's almost involuntary flitting from style to style does not address the one overarching consistency in his approach to the profession—more exactly, to the art. He never stopped believing that the aesthetic dimension was the only admissible measure by which architectural quality could be judged; social, economic, political, and moral values mattered not at all. In fact, to some extent his passion for how

**FOR JOHNSON, THE AESTHETIC DIMENSION WAS THE ONLY ADMISSIBLE MEASURE BY WHICH ARCHITECTURE COULD BE JUDGED.**

things look rather than what they stand for accounts for the fascination he found in the pageantry—the leather jackets, the parades of goose-stepping soldiers, the nocturnal rallies with search lights scanning the skies—at which the Nazis were so skilled.

When playwright Arthur Miller died just a few weeks after Johnson, it was impossible not to notice the enormous difference in motives for creative expression between two of the most famous people in the American arts of the 20th century. Miller was guided—driven—by social and moral issues that he insisted required taking sides. By contrast, Johnson, the cynic, explained: "I don't believe in the good, the true, or the absolute, or in justice or mercy." Instead, he took his cue from the Sophists of ancient Greece, who understood truth in a relative and contingent manner and advocated persuasion in lieu of "proof," thus elevating rhetoric to the highest place in human communication. Surely, he was a master of self-promotion, evident in the exceptional wit he brought to bear when speaking extempore. Well into his 80s, he could hold an audience in the palm of his hand: the architect as standup comedian.

That showmanship points to another, superficially related but ultimately profounder effect, in which his gift for words was employed to an end not merely cynical but worthy of being taken seriously even by his harshest critics. In the years he spent as the on-and-off head of the architecture department at the Museum of Modern Art, he did more than anyone to make the study of architecture a museological discipline of the highest order. He was the catalyst behind the historic *Modern Architecture: International Exhibition* of 1932 that introduced America to the great European Modernists, chiefly Mies van der Rohe, Le Corbusier, and Walter Gropius, who set the course for world architecture for generations. He followed that success in 1934 with *Machine Art*, in which he convincingly demonstrated the beauty and elegance of ordinary manufactured tools. And he organized MoMA's 1947 retrospective of Mies's work, for which he wrote a monograph that remained for decades the prime source of information about one of the greatest architects of modern times.

He was responsible for other shows and other prose, most of it worthy of engaged study. His *Philip Johnson: Writings*, published in 1979, reveals an acute critical and historiographic mind—a figure far more admirable than the self-serving image dished up in 1994 in *Philip Johnson: The Architect in His Own Words*, where interviewers Hilary Lewis and John O'Connor gave him plenty of room to try to show the

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world what a wonderful designer he was.

The lasting legacy? It probably is too early to say for sure, but from this biographer's corner, history will remember Johnson the curator, critic, and historian longer and with greater respect than it will Johnson the architect. ■

**PHILIP JOHNSON/Essay by Stern** *(continued from page 180)*

of the architect-turned-sculptor Tony Smith—to the skyscraper type. But Johnson's greatest accomplishment as a skyscraper architect was returning the romantic dimension of the 1920s to that building type. In the wake of post-Miesian revisionism, the skyscraper had become diagrammatic, perfunctory, and dull. Johnson's skyscrapers of the 1980s showed he was the new Raymond Hood, finding poetry in the adaptation of past forms to new technologies and a new scale of enclosure.

With AT&T (page 178, *1*), Johnson picked up where McKim, Mead and White had left off. The loggia at the building's base was decidedly monumental, a place for pedestrians to crisscross under a soaring canopy. I wish it hadn't been filled in with stores and showrooms. In contrast to AT&T, the "Lipstick" Building (page 180, *9*), also in Manhattan, is sheer fun and games. Its telescoping mass is a very New York design, highly reminiscent of the setback towers of the 1920s. More specifically, the "Lipstick" Building evokes an unrealized proposal of Raymond Hood's for Rockefeller Center in 1931. PPG Place in Pittsburgh (1984) may be a bit thick-waisted, but its glassy Gothicisms do bring sparkle and a sense of wonder to that city's skyline. The Bank of America Center (formerly Republic Bank) in Houston (1984) revived the fanciful skyscraper massing of 1920s setback skyscrapers; and Transco Tower in Houston (1983), following the example of Bertram Goodhue's various late towers, shoots skyward with iconic clarity.

Johnson was one of the few architects of his generation who could create convincing monumental form (Louis Kahn was another, and on occasion, Eero Saarinen). The Roofless Church in New

**JOHNSON HAS BEEN ACCUSED OF BEING DERIVATIVE, BUT ONLY THE NAIVE PRETEND TO UNCONTAMINATED ORIGINALITY.**

Harmony, Indiana (1960), with its walled temenos setting off the astonishingly complex geometry of the shingle-clad pumpkin dome that shelters Jacques Lipschitz's sculpture, is unforgettable, a great place of quiet, opening on one side to frame a heartbreakingly beautiful view of corn fields stretching to the horizon. His unrealized proposal for Ellis Island (1966) would certainly have rivaled the Statue of Liberty and Wright's Guggenheim Museum as a New York City icon. What a bold project it is, with its dynamic coil of ramps ringing a truncated cone! His New York State Pavilion for the 1964 World's Fair, even in its present state of dereliction, is one helluva marker on the flat landscape of Queens, New York.

Johnson has been accused of being derivative. But who isn't in some way or other? Only the most naive of us pretend to uncontaminated originality. Among the postwar Modernists, Johnson was the compulsive truth-teller, not only about the work of others, but also his own: "You cannot not know history," he admonished Yale students in the late 1950s. Johnson may have proclaimed his dependence on sources a little too much for his own good—he could be self-deprecatory to a fault—but in roaming around history, he always transformed what he saw in the past into something of his own.

I would like to continue extolling the virtues of Johnson's architecture, but I think it's important to shift *(continued on next page)*


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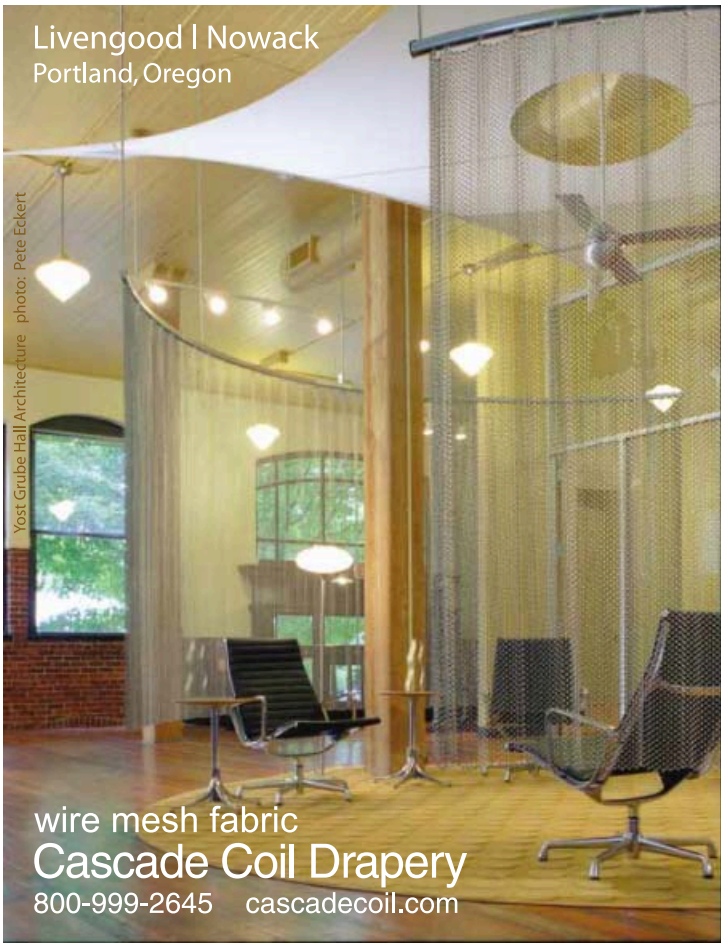
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**PHILIP JOHNSON/Essay by Stern** *(continued from previous page)*

emphasis and touch on another aspect of his life—a sensitive topic, the handling of which in some of the obituaries and posthumous commentaries has bothered me: Johnson's youthful foray into politics.

Many have brought up Johnson's Nazi and American right-wing sympathies of the 1930s as if this were secret information. Embarrassing, yes, but not secret. In fact, the matter was long ago acknowledged and discounted by those who knew him and by others whom he reached out to in an effort to make amends. At Yale, where I studied architecture in the early 1960s, Johnson was very much on the New Haven scene. And we all knew about his 1930s Nazi sympathies. Many of us read his essays in *Social Justice* and the relevant pages by William Shirer in his *Berlin Diary*. Ulrich Franzen, who had left Germany as a teenager in the 1930s and was a popular teacher at Yale, made us aware of how Johnson had been made to suffer for his misdeeds when he studied at Harvard's GSD in the early 1940s and when he later served in the Army during World War II. While

## JOHNSON'S 1930S NAZI SYMPATHIES WERE NO SECRET TO THOSE WHO KNEW HIM AT YALE IN THE EARLY 1960S.

to my knowledge, neither Yale faculty nor students confronted Johnson with the embarrassing facts of his youthful political wanderings, we did discuss them among ourselves, speculating about what had attracted him to the Nazi cause; but then, we also speculated on why others were virulent Stalinists in the same era and continued to be so well beyond the point when Stalin's evils were common knowledge.

It was not only Johnson's pro-Nazism, but also his presumed anti-Semitism that we considered. As Johnson and I became friends, we talked about anti-Semitism and its consequences. For one thing, we talked about the "social" anti-Semitism that was a fact of American life until well after World War II. Johnson was brought up in a milieu where social anti-Semitism was acceptable. But by the time he went to Harvard College in the 1920s, as the cliché used to have it, some of his best friends were Jewish: Eddie Warburg and Lincoln Kirstein to name two who became particularly close to him. Of course, there is a wide chasm between social anti-Semitism and Hitler's virulent strain of hate. But Johnson was not alone in failing to recognize the horror of Hitler's obsession. Many Americans, in fact, did not take in the full magnitude of Hitler's hatred until the late 1930s, and even some Jews in Germany clung too long to the belief that Hitler's talk was just that! But when Johnson did come to, seeing Hitler for the evil he was, he quickly turned away from politics. Johnson's misadventures of the 1930s need to be seen against a broader canvas of the times and in light of all sorts of demons that plagued him then. Many of his Jewish friends like Kirstein and Warburg, who knew of his personal agonies, remained loyal to him despite whatever misgivings they may have had about his political leanings.

In the 1970s and 1980s, Johnson and I talked about those years. Some conversations form an oral history he and I made for Columbia University. I frankly wish I had also taken the opportunity to discuss the topic with his Harvard friends. But now it's too late; they're all gone. I do remember one conversation with Johnson in which he said to me, "I have paid for this in so many ways." One way he paid was with the Congregation Kneses Tifereth Israel Synagogue in Port Chester, New York, which he designed in 1956. For this project, with its limpid, light-filled, Soane-inspired sanctuary space, he gave up his fee because he was so grateful for the support the congregants of that synagogue showed him.

But why go on? In reckoning a life's worth, there are bound to be so very many aspects to consider, not all of them admirable—for me,

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Johnson's worth as an architect, as a mentor, and as a friend more than outweigh a stupid, repugnant misalliance he long ago repented.

The culture of architecture is vastly diminished because Johnson is no longer here to spur us along with the example of his work, his intellectual curiosity, and the élan of his very being. I miss him very much. ■

**PHILIP JOHNSON/Essay by Sorkin** *(continued from page 183)*

and Johnson was unable to draw two parallel lines, neither proposed any purpose for his project other than self-entertainment (in Meyer's case, what used to be called self-abuse). Both were flacks for the kind of confident American styles of hyper-consumption that were spawned by postwar prosperity and that morphed over the succeeding years into the unsustainable Bushian greed ravaging the planet today.

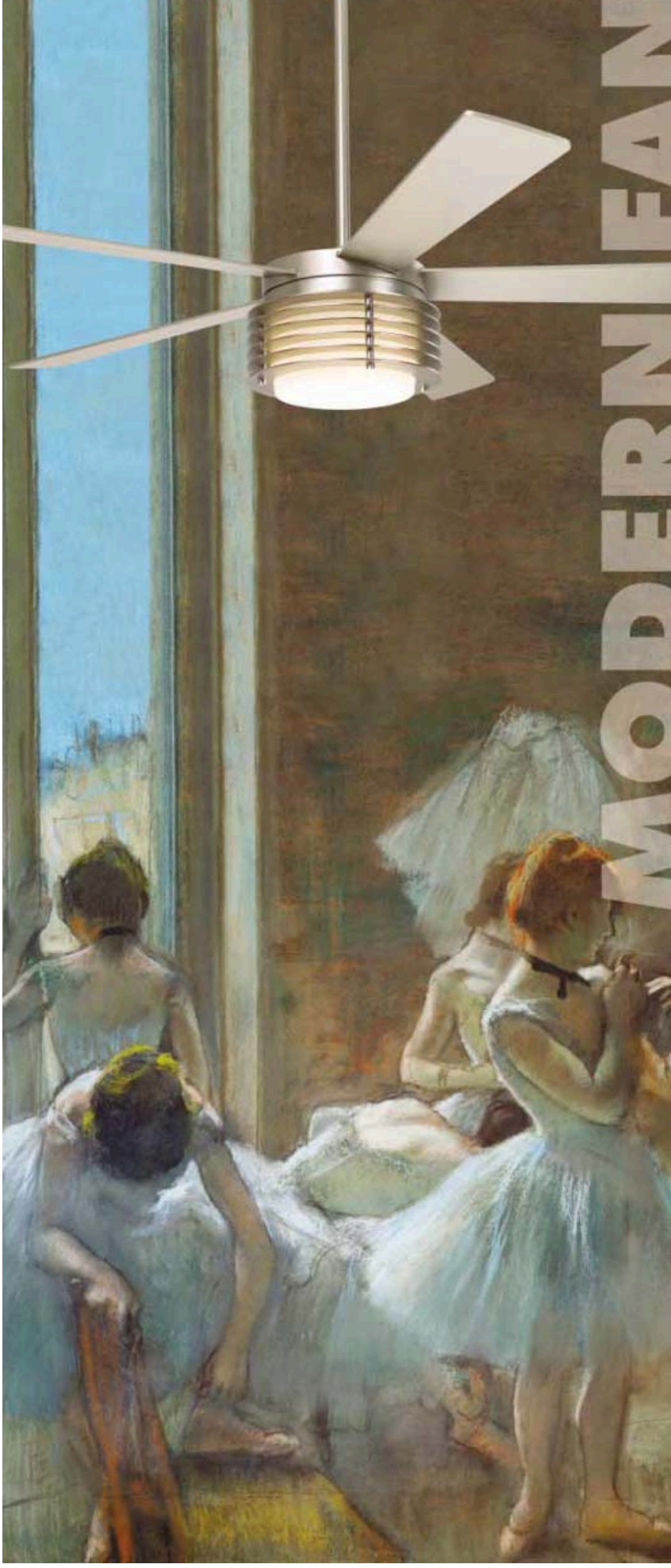
Both men had, to put it mildly, problematic politics. Meyer floundered on his "Playboy Philosophy" approach to women. If he was less self-conscious than Hugh Hefner, who made endless claims to be an avatar of liberation, Meyer nonetheless shared the same stupid core of unremitting objectification, never mind efforts to invent him as a kind of proto-feminist. Johnson, whose writing is vastly overrated by his coterie of sycophants, was purer in his evil—although, like Meyer, he did contribute, via his utter cynicism, to the anything-goes assault on the era's hypocritical Puritanism. The generation of his Postmodern admirers (themselves using Johnson to justify a social indifference that pollutes the profession to this day) worked hard at ignoring (or excusing) the fact that Johnson was an out-and-out Nazi. This was not the youthful indiscretion that many suggest, but a dedication of years, and one for which Johnson never fully accounted.

Johnson's fascination with fascism deeply informed his work. Just as Hitler's vision for the world was deeply couched in an aesthetic vision of uniforms, redemptive violence, and racial purity (and just as Walt Disney's seemingly benign project occluded his own racism and anti-Semitism), so Johnson's emptily aestheticized world view conceals a politics of privilege and indifference. (For a discussion of Disney's preju-

**JOHNSON DID CONTRIBUTE, VIA UTTER CYNICISM, TO THE ERA'S ANYTHING-GOES ASSAULT ON HYPOCRITICAL PURITANISM.**

dices, read Richard Schickel's *The Disney Version*, published in 1997 by Ivan R. Dee.) In a life of nearly a century, Johnson never interested himself in any of the registers through which architecture and its philosophy can help enfranchise; never showed much, if any, concern with housing the poor, with the environment, with the fate of cities. His own philosophy was rooted in a school-boy Nietzcheanism of supermen and the will to power. Indeed, his major contribution to the intellectual history of architecture is probably his early, largely successful effort to introduce Modernism to the United States (via the famous 1932 Museum of Modern Art *Modern Architecture* show) in a way that thoroughly sheared it of its originating commitment to social betterment, reducing its content to nothing but form.

My only regret over Johnson's shuffle from the coil is that he never wrote an autobiography (unlike Meyer, who left *A Clean Breast*, published in 1992). How fascinating it might have been to read his own account of his meetings with Kingfish Huey Long or Father Coughlin, his ride into Poland following the Wehrmacht, his appreciation of the décor at the Nuremberg rallies, his real opinion of the younger generation of architects who devoted so much time sucking up to him, his take on the so-called sexual revolution. Unfortunately, all that's left is his mediocre, superficial body of work and his lavish contribution to the politics of narcissism. The end of an era, let us hope. ■




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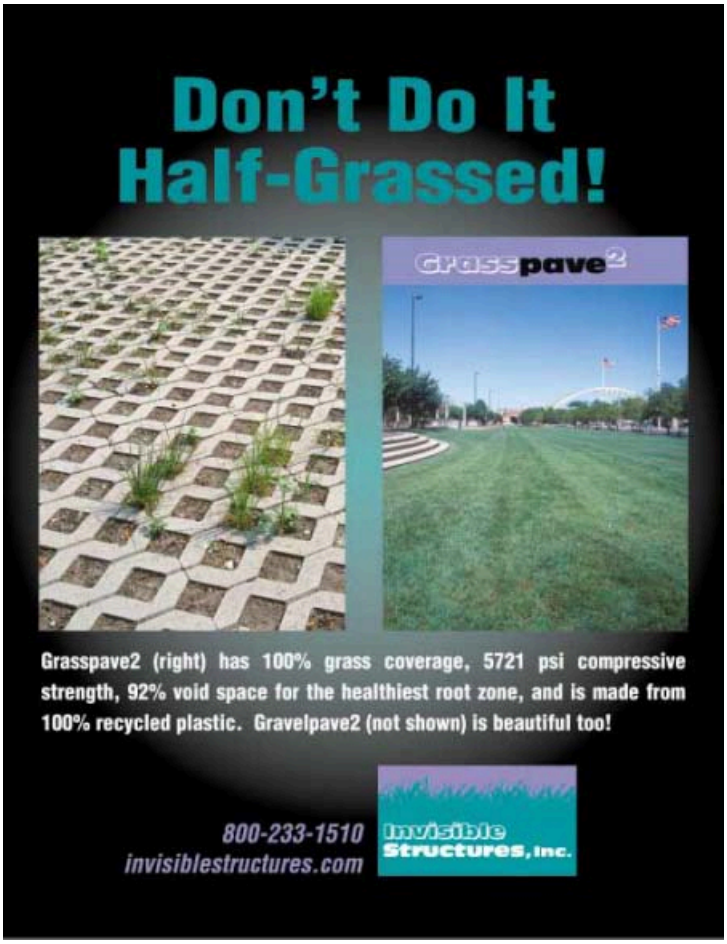
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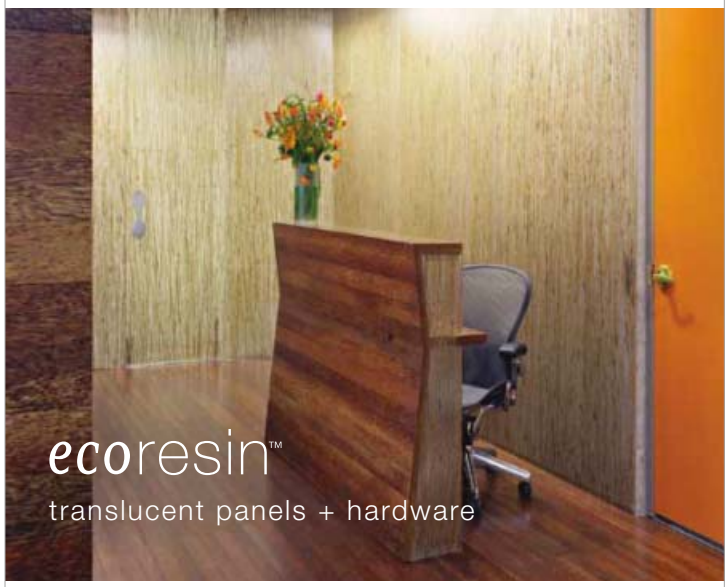
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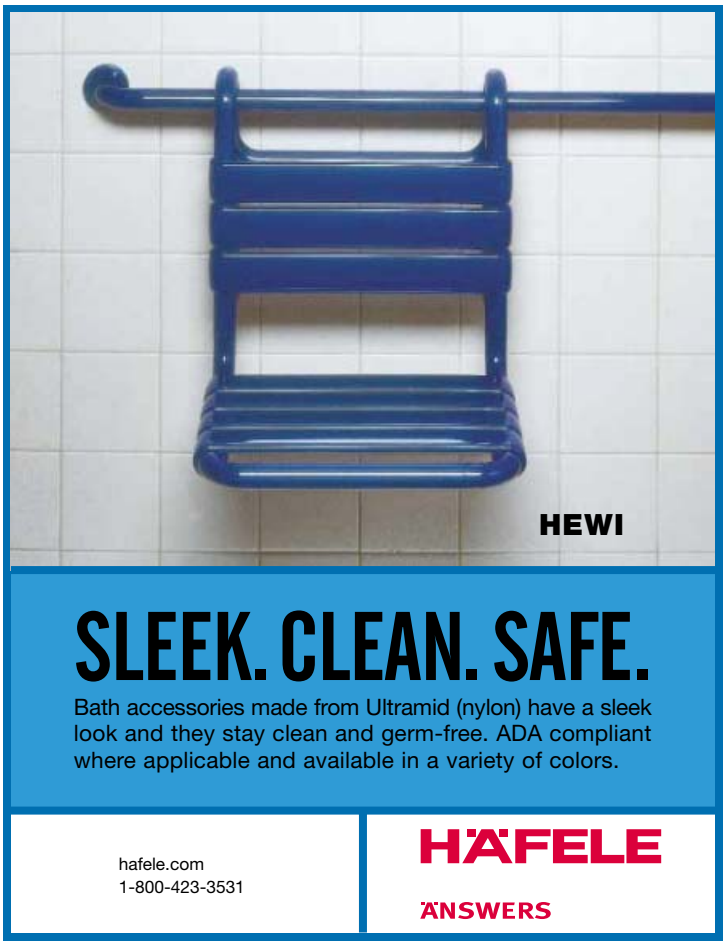
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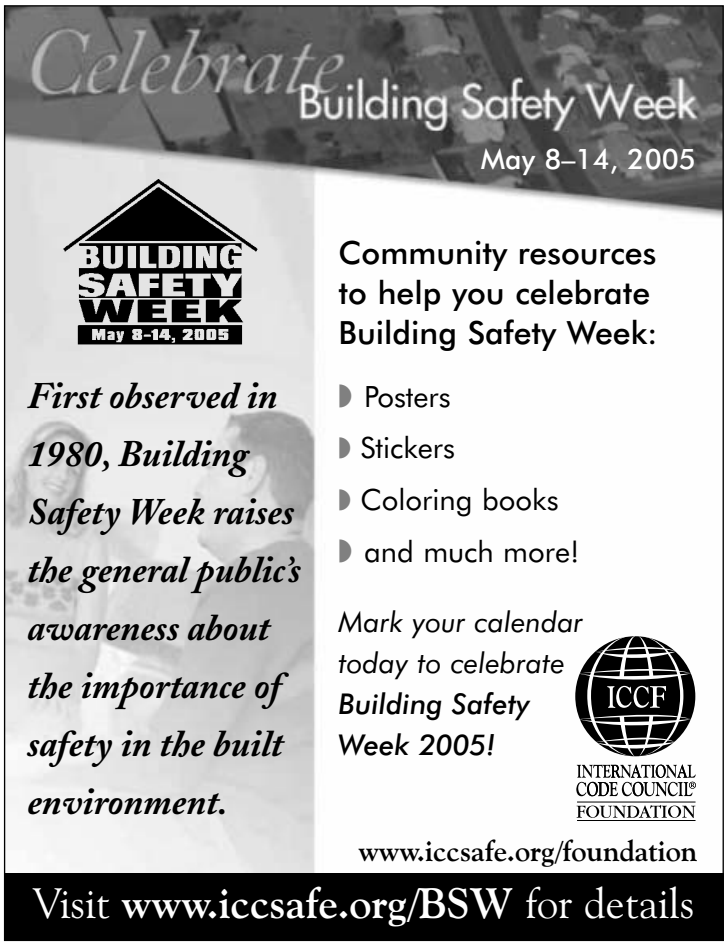
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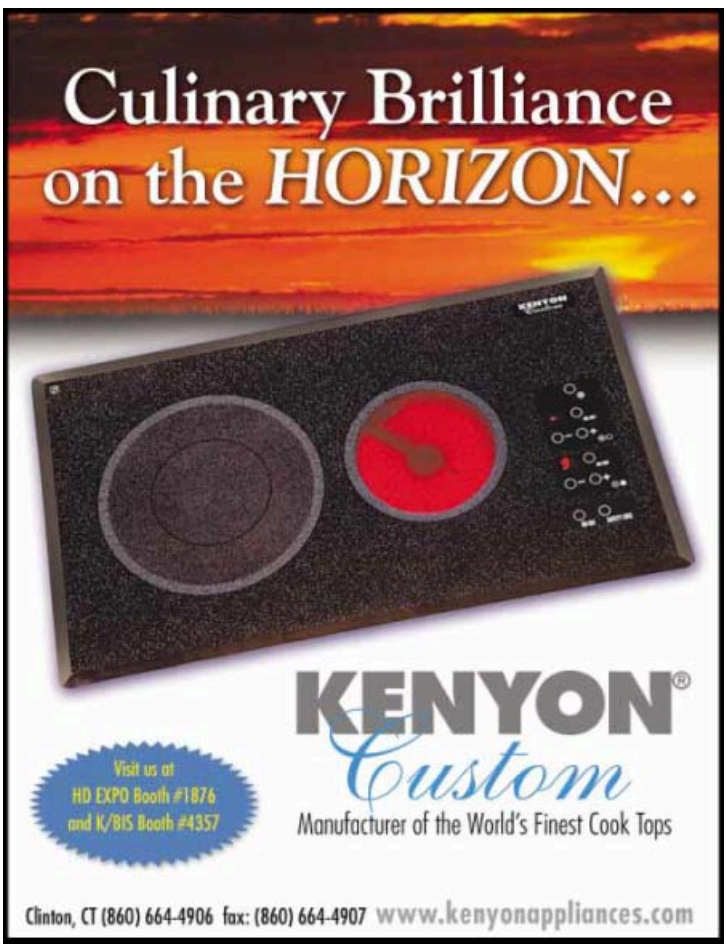
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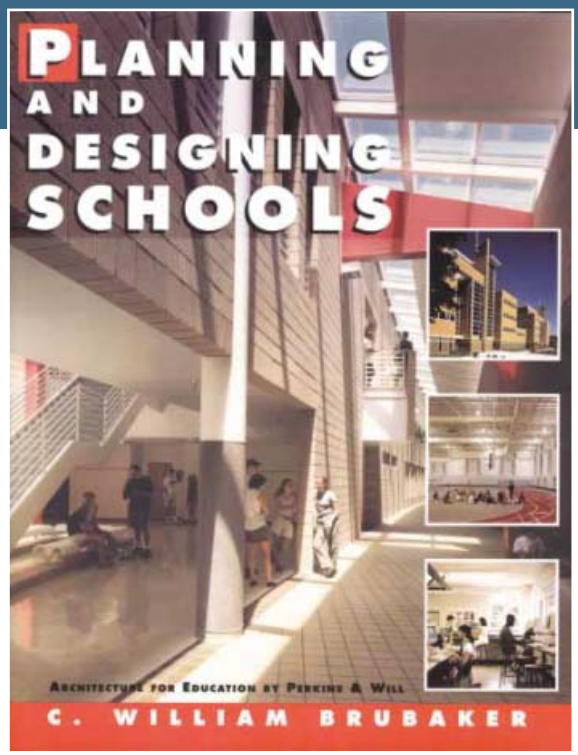
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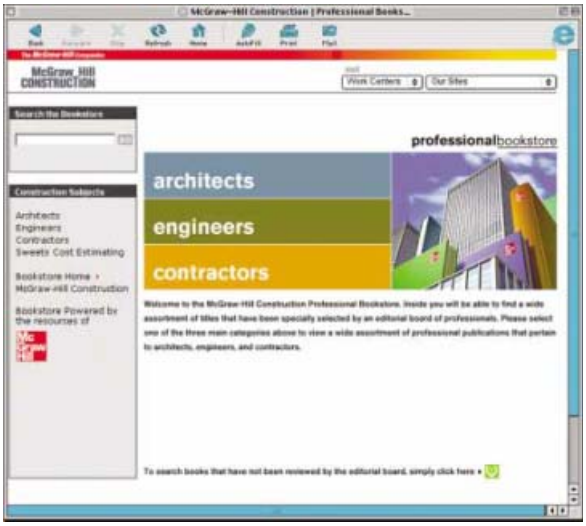
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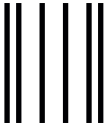
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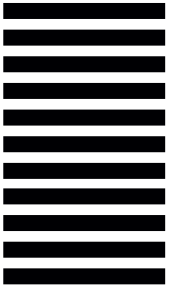
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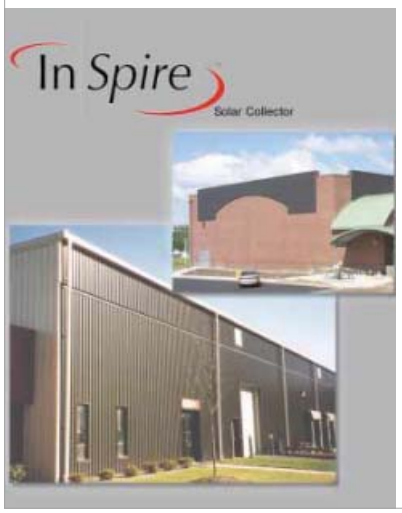
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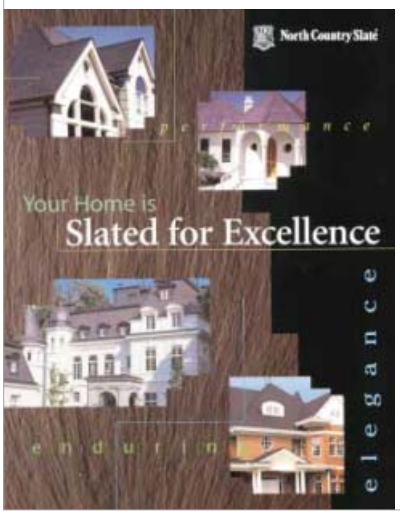


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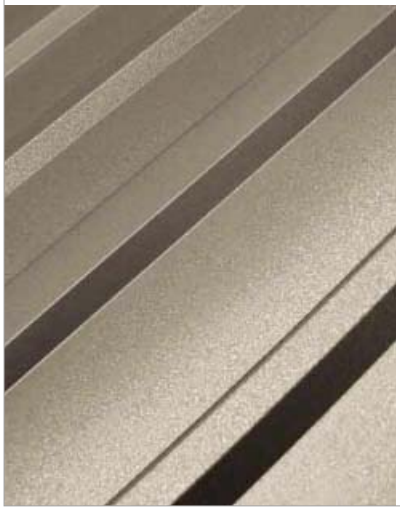
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www.shakertown.com
AIA booth 3079

Circle Reader Service #163

## Fire-Rated Aluminum Doors & Windows

8 Doors & windows




**Aluflam**

Imagine being able to specify a fire-rated system that blends in so well with non-rated materials that you virtually can't tell them apart. Imagine the clean, rich lines of true extruded aluminum frames and large panels of clear glass. With ALUFLAM framing and VETROTECH SAINT-GOBAIN glass, this is reality. Contact them for further information. Fax number 714-899-3993 Email info@aluflam-usa.com

714-899-3990
www.aluflam-usa.com

Circle Reader Service #166

## Smoke Control for Elevator Hoistways

7 Thermal & moisture protection



**Smoke Guard, Division of RectorSeal**

Designed with medical, hospitality and multi-story residential applications in mind, the Smoke Guard® System is an aesthetically pleasing, space-saving alternative to traditional applications. Concealed in the ceiling or a valance, it deploys only when smoke is detected at the hoistway. The Smoke Guard System returns usable space to the owner on every floor, creating valuable space in your design. The deployed system forms a smoke- and draft-control assembly at the elevator hoistway door as required by the International Building Code (IBC).

800-574-0330
www.smokeguard.com
AIA booth 2479

Circle Reader Service #164

## Barn Door Hardware

8 Doors & windows



**Crown Industrial**

Crown Industrial provides a complete line of barn door hardware. Hardware includes sliding door track and trolleys, 'horse fooler' latches, cremone bolts, strap hinges and folding door hardware. Sliding door hardware comes in either 'box' or 'flat' track styles. (Flat track shown.) The trolley rides on top of a 1/4-in.-thick flat bar track. Various finishes, styles and sizes are available. Products used for barns, wineries, lofts, offices, restaurants, residential and commercial applications.

650-952-5150
www.crown-industrial.com

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## Glass Staircases

8 Doors & windows



**Nathan Allan Glass Studios, Inc.**

A spectacular four-story corporate staircase project! 80 treads and 20 landings, using Cast Glass "Checkerplate" textures (Diamondplate), with two layers of 5/8-in.-thick tempered glass. The walking surface has an exclusive "Glass Sandpaper" safety finish. The finished product is engineered. Big D Construc-tion, Corporate Headquarters—Salt Lake City, UT.

www.nathanallan.com
AIA booth 467

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## Doors for Interior Architecture

8 Doors & windows



**Woodfold-Marco Mfg., Inc.**

Some will say that nothing is more beautiful than wood. Woodfold-Marco would agree. Woodfold custom made accordion and roll-up doors (available in hardwood and non-hardwood finishes as well) are both functional and beautiful. Woodfold-Marco has models available for use as sight, security and acoustic applications. Its solid hardwood roll-up doors coil conveniently overhead. And to assure on time completion of your projects, Woodfold-Marco has the industry's best production cycle. Fax number 503-357-7185

503-357-7181
www.woodfold.com
AIA booth 3132

Circle Reader Service #171

## Fire-Rated Frames

8 Doors & windows



**Technical Glass Products**

Technical Glass Products' Fireframes Hardwood Series provides an attractive fire-rated framing alternative for individual glass lites in sizes up to 31-sq.-ft. The Hardwood Series features an engineered core for dimensional stability and a thick hardwood face for unmatched beauty. The frames are available in a variety of wood species and come in complete packages for easy installation. Hardwood Series frames are available with fire ratings from 20 to 60 minutes.

888-397-3473
www.fireglass.com
AIA booth 1259

Circle Reader Service #169

## Rubber Finishing Border System

9 Finishes



**Johnsonite**

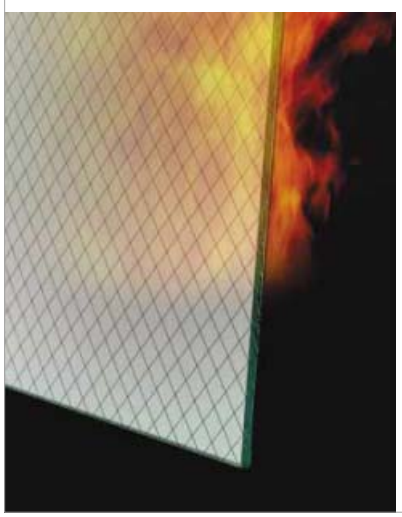
Johnsonite® Bolsters rePLACE® Demounting Finishing Borders System™: Company adds three profiles to first reusable, replaceable and recyclable wall base. Johnsonite, the leader in providing flooring solutions that contribute to the creation of high performance environments, is showcasing the addition of new profiles to its rePLACE® product line. rePLACE is a patented rubber finishing borders system that hangs on a track, enabling it to be easily reused, replaced or recycled. The new profiles enhance the architectural design of this unique and innovative finishing borders system. Email rtipton@johnsonite.com

800-899-8916
www.johnsonite.com

Circle Reader Service #172

## Wired Glass

8 Doors & windows



**Technical Glass Products**

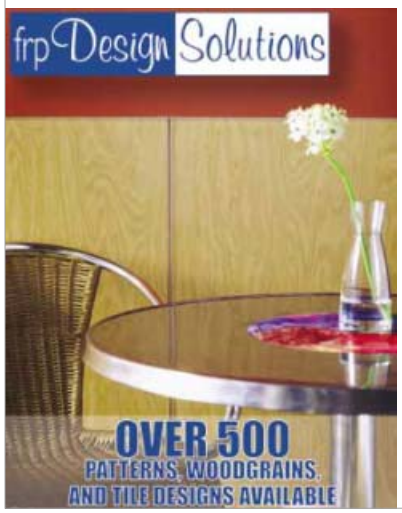
Technical Glass Products introduces Pilkington Pyroshield™ Plus—a new breed of wired glass that offers impact safety in addition to fire protection. Pilkington Pyroshield™ Plus is formed by laminating traditional wired glass with a special interlayer to another layer of clear glass. This gives it the strength to meet the impact safety standard of CPSC 16CFR1201 (Category I), without depending on a surface-applied film. It carries fire ratings up to 90 minutes in doors and up to 45 minutes in other applications.

888-397-3473
www.fireglass.com

Circle Reader Service #170

## Decorative Wall Panels

9 Finishes




**Kemlite Company**

frpDesign Solutions is a family of decorative wall panels that provides an alternative to traditional wall coverings such as ceramic tile, wood paneling or vinyl wall coverings. Offering both functionality and design, products in the frpDesign Solutions line are made of a moisture resistant frp panel with a decorative finish that include a myriad of colors, patterns and woodgrains as well as a tile look panel. Available with over 500 hundred choices, frpDesign Solutions is easy to install and maintain. For more information, visit Kemlite on the Web.

888-332-6377
www.frpdesignsolutions.com
AIA booth 655

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## Cork & Linoleum Floating Floors

9 Finishes



### Nova Distinctive Floors

Nova Cork and Linoleum Floating Floors embrace design, function and environmental consciousness. In 1-in. by 3-in. 'klick' (glueless) system planks, Nova Distinctive Floors' 2005 line boasts 28 designer patterns in cork and the bold 9 linoleum colors with accent tiles. Harvested from forests that meet environmental, social and economic standards, Nova Cork, Linoleum, and Underlayment products have received the "Green Spec" distinction from Building Green, Inc as well as FSC and SCS certifications and offer a 20-year residential and 10-year commercial warranty.

866-576-2458
www.novaflorings.com
AIA booth 1384

Circle Reader Service #174

## Canyon Tone Stains

9 Finishes




### United Coatings

The Las Vegas Monorail required integration of precast elements for a multiple-phase construction project. Components from several casting yards came together with uniform color thanks to coatings from a single supplier. In some cases components were coated as much as a year apart and showed no visible differences. Canyon Tone Stain from United Coatings was specified for its performance and durability as well as color consistency. For more information on Canyon Tone Stain call United Coatings at (800) 541-4383 or visit us online at www.canyontonestain.com.

800-541-4383
www.canyontonestain.com

Circle Reader Service #177

## Noise Barrier Systems

9 Finishes



### QUILITE Noise Barriers

The patented QUILITE® Noise Barrier System reduces noise by 60% to 80%. It is a factory-assembled panel system of clear polycarbonate blocks enclosed in noise-trapping bezels and mounted in a high strength steel frame. QUILITE® is also resistant to graffiti. QUILITE® panels are 5-in.-thick, available in modular sizes to produce walls over 30-ft.-high. QUILITE®'s light weight of 6-lb. psf permits easy handling. See their product display at the New Product & Technology Center in the AIA Show.

310-641-7701
www.quilite.com

Circle Reader Service #175

## Porcelain Floor Tiles

9 Finishes



### Viva Ceramica

VIVA LIMITED EDITION is a new collection of floor coverings with exclusive distribution. The collection includes MAXI floor tiles: 12mm glazed, color-through, very large sized porcelain tile with graphics reminiscent of wood.

www.cerviva.it

Circle Reader Service #178

## Bamboo Flooring, Panels & Veneers

9 Finishes



### Teragren LLC

Teragren, formerly TimberGrass, introduces SIGNATURE COLORS—Espresso, Cherry, Walnut and Charcoal. The water-based stains are applied to the flat grain natural bamboo planks to maximize durability. The 5-coat German prefinish applied to the stains is water-based, solvent-free and non-off-gassing which meets the company's mission to build a company that is environmentally, socially and economically responsible®. All Teragren bamboo products qualify for LEED™ and are ideal for both commercial and residential applications.

800-929-6333
www.teragren.com

Circle Reader Service #176

## Guaranteed Effective Silent Outdoor Bird Control

10 Specialties




### Bird Barrier America

Ultrason X is the first-ever ultrasonic bird repeller for exterior use. This eliminates the need for an enclosed area for the sounds to reverberate. Unique 'silent to humans' harassments attack pest birds to leave for good, yet it's harmless to the birds, the environment and your building. Ultrason X targets pest birds with ultrasonic waves that move from speaker to speaker, giving a constant, menacing, multi-bird defense. The powerful 'Surround sound' directional speakers offer greatest all-around flexibility. Also offered is a full Bird Control product line.

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www.birdbarrier.com

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## Ceiling Fans

**10 Specialties**



### G Squared

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805-595-2392
www.g2art.com

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## Access Floors

**10 Specialties**



### Steelcase

Effectively routing wiring and HVAC systems, access floors are easier to change and more flexible and cost-effective than traditional buildings. Pathways Access Floor installs on top of the concrete slab creating cavities to run wiring and HVAC. Pathways Low-Profile Floor is ideal for renovations of buildings with established ceiling heights. It is 2-1/2-in. high, yet provides 2-in. of clearance to manage communications cabling and power distribution.

www.steelcase.com

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## Curved Church Pews

**12 Furnishings**



### New Holland Church Furniture

Curved pews are "Round For A Reason"™ and are designed and manufactured by New Holland Church Furniture. Curved pews are designed for maximum seating, curved for efficient use of space, designed to enhance worship, created for community, uniting the family of God. New Holland Church Furniture is a certified member of the Architectural Woodwork Institute (AWI), so you can be assured of the very highest quality. Email nhcw@newhollandwood.com

800-220-1465
www.newhollandwood.com

Circle Reader Service #182

## Custom Stainless Steel & Copper Bath Fixtures

**13 Special construction**



### Diamond Spas, Inc.

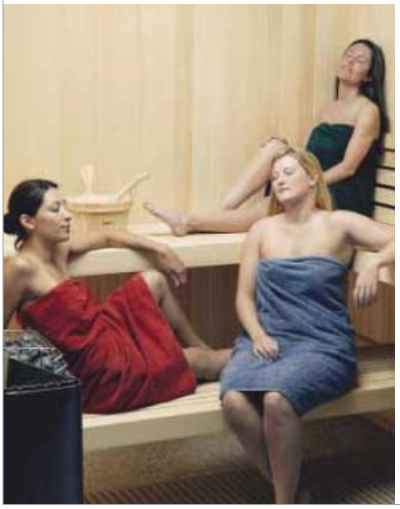
Diamond Spas specializes in metal plumbing fabrication. The DSI line consists of soaking baths, whirlpool baths, Japanese baths, shower pans, lavatories, kitchen sinks and spas/hot tubs. What sets Diamond Spas apart from other manufacturers is their ability to customize. Every bath fixture of spa is designed and built specifically for the client. Your visions become reality when Diamond Spas is part of your project. DSI has the talent and expertise to create artistic, sophisticated, highly durable products for the upscale home.

www.diamondspas.com

Circle Reader Service #183

## Saunas

**13 Special construction**



### Finlandia Sauna Products, Inc.

Finlandia Sauna has manufactured exclusive and authentic saunas since 1964. Finlandia offers precut sauna packages and modular sauna rooms as an affordable luxury that can be included in any remodel or new construction. The company markets four all-clear western softwoods and is the only manufacturer to use 1-in. by 4-in. paneling, instead of the cheaper 1/2-in. by 4-in. material used by others. Finlandia's packages include all room parts, a choice of a Finnish made electric heater, a prehung door with choice of glass, and all necessary accessories.

800-354-3342
www.finlandiasauna.com

Circle Reader Service #184

## Elevator Door Facings

**14 Conveying systems**



### Gage Corporation, Intl.

ECO-NOR offers six distinctive pre-decorated elevator door facings in 18-ga. stainless steel. ECO-NOR is competitively priced, making it an ideal choice for remodeling or budget sensitive projects. Finishes of all designs complement existing or new #4 stainless steel frames. ECO-NOR offers prompt lead times without the need for prior specification. ECO-NOR is a product of Northern Engraving Corporation. Fax number 608-269-7622 Email gage@centurytel.net

800-786-4243
www.eco-nor.com

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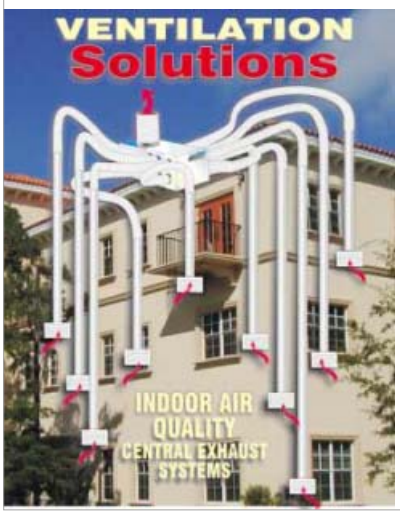


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## Exhaust Ventilation Systems

15 Mechanical




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800-255-7749
www.americanaldes.com

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## Innovative Lighting

16 Electrical



**Engineered Lighting Products**

The "Hole In The Wall" goes small! The newest member of the "HITW" family has a 4-in. by 5-5/8-in. aperture opening. The durable GRG cast housing once installed becomes one with the wall appearing as a custom formed drywall 'light niche.' Available in either LED or low wattage incandescent light sources.

626-579-0943
www.elplighting.com

Circle Reader Service #189

## Arts & Crafts Fixtures

16 Electrical



**Architectural Area Lighting**

Style and grace meet efficiency and versatility in these round and square fixtures. Hoods in stainless steel, copper, opal and mica acrylic, and painted aluminum. Fax number 714-994-0522

714-994-2700
www.aal.net
AIA booth 3655

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## Vapor-Tight Lighting Fixtures

16 Electrical



**Luraline Products Company**

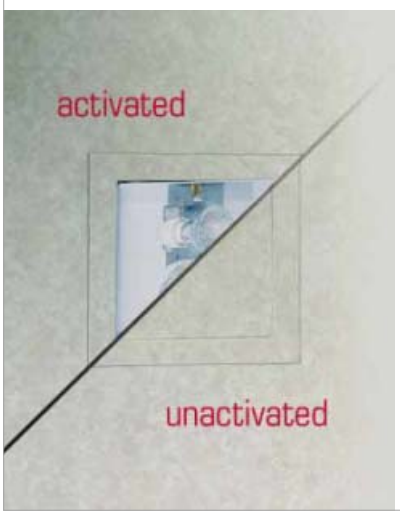
Luraline/VANGUARD SERIES: The Vanguard series of vapor-tight lighting fixtures is ideal for industrial styled interiors and exterior settings requiring extra protection, such as parking lots, walkways, and recreational, educational, institutional and health care applications. Suitable for use in wet locations, all models are fully gasketted to seal against moisture and exposure to the elements, including dust, fumes and insects. The Vanguard series is available in pendant, ceiling and wall-mount configurations, with choice of incandescent, compact fluorescent or H.I.D. lamping.

800-940-6588
www.luraline.com

Circle Reader Service #190

## Customized Emergency Lighting

16 Electrical




**Concealite Life Safety Products**

Artistry and architecture merge when designers incorporate Concealite's 5000 Series into their interiors. The 5000 Series can be customized to fit any interior color or texture. Whether your walls are painted with hard-to-match color, unique wallpaper, rustic wood grains, or a combination, Concealite can customize the frame and panel of each 5000 emergency light to blend into its surroundings and complete the look of your space while still meeting all of the emergency lighting requirements. For more information, please visit their Web site.

www.concealite.com
AIA booth 1988

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## Sign Lights

16 Electrical



**Primelite Manufacturing Corp.**

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800-327-7583
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# ENR 2005 TOP FIRM LEADERS FORUM

Constructing in the 21st Century:
New Ways to Think, New Ways to Build

Renaissance Chicago Hotel
Chicago, June 14-15, 2005

## Overview:

**Top-level executives from the industry's leading contractors, design firms, equipment and building product manufacturers, and building and facility owners will gather to discuss trends, innovations and business issues. The Forum's inter-active panel discussions and networking sessions will allow and encourage attendee participation.**

## Sponsors:

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## Forum Sessions and Participants include:

### Keynote Speaker:

- **Barry McCaffrey**, **Federal Services, HNTB** (Invited)

### Program Metamanagement: The Next Level

A new breed of program management-on-steroids -- ENR calls it program metamanagement -is delivering more predictable costs, improved consistency of design quality, increased speed, greater agility to enable project and process improvements across the board, and more. Five Top Firm Leaders share real examples of program metamanagement in action.

**Panelists:**

- **Charles Bacon, III,** President and CEO, **Limbach Facility Services LLC**
- **Mike Bellaman,** Global Director, **Bovis Lend Lease**
- **Charles B. Thomsen,** Chairman, **3D/I**
- **Barbara White Bryson,** Associate V.P. of Facilities, Engineering and Planning, **Rice University**
- **Robert C. Workman,** Chairman, **BSW International Inc.**

### Productivity Improvement: It's Here, It's Real, and It's Up To You

There now exist hard, replicable productivity-enhancing procedures that you can utilize to improve the productivity and profit of your firm. Find out what some Top Firm Leaders are doing to shatter the myth that construction cannot be "predictably productive."

**Panelists:**

- **Harvey M. Bernstein**, V.P., Industry Analytics & Alliances, **McGraw-Hill Construction**
- **Greg Clum**, Labor Relations Manager, **Black and Veatch**
- **Brian Foster, Revay and Associates Limited**
- **Mike Kenig**, Vice Chairman, **Holder Construction**

### The People Side:

### Your AEC Workforce Facing Technology-Driven Change

BIM, web-based project collaboration software, ubiquitous mobile communication, and other technology-driven change are yielding profound shifts in the way people relate to each other within our firms and across our industry. Learn how to help everyone involved cope with the transition to the future.

**Panelists:**

- **Tom Garrett**, CIO, **Brasfield & Gorrie LLC**
- **Ben Fergus**, CIO, **CH2M-Hill**
- **Michelle Kantor**, **MFK Consulting**

### Winning Teams!

These panelists' companies are among those that moved up the most in their respective ENR "Top" list over the past two years. What did they do to achieve this kind of upward mobility? Be part of this open conversation with Top Firm Leaders.

**Panelists:**

- **Tom Wening**, Executive Vice President, **H.J. Russell & Co.**
- **Glenn De Stigter**, Chairman, President and CEO, **The Weitz Company**

### Closing Speaker:

- To be announced

### Networking Reception - 5:00 to 6:30 PM, Tuesday, June 14th

### Networking Lunch (Optional) - 12:00 , Wednesday, June 15th

For more information or to register, visit the Forum website.
www.construction.com/event/

Call: 212-904-4634 or E-mail: chuck_pinyan@mcgraw-hill.com

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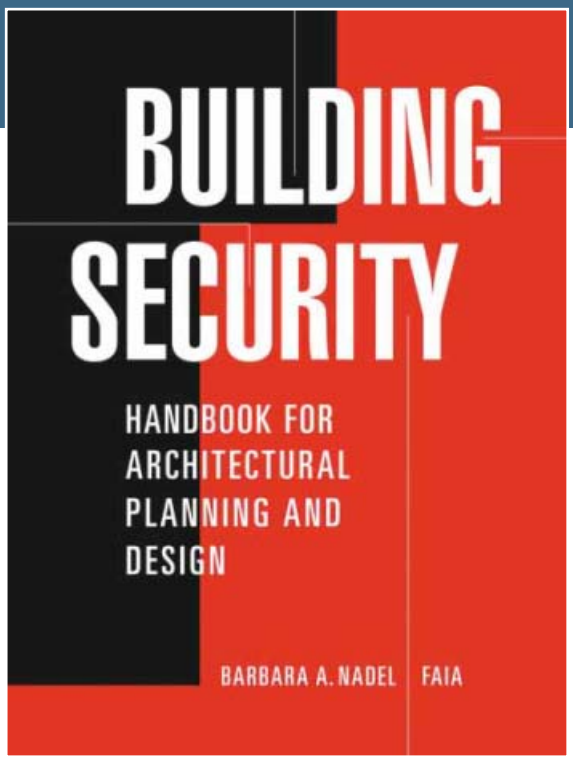
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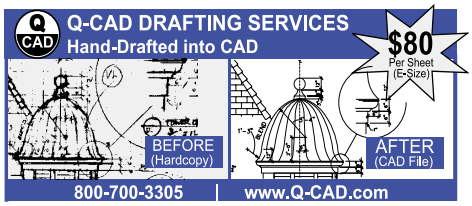
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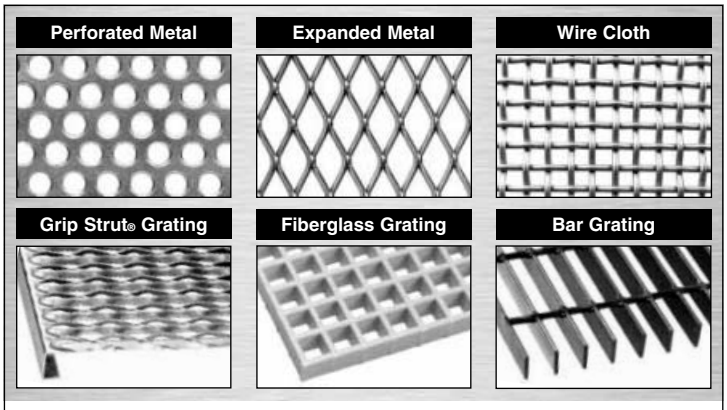
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| | | | |
|---|---|---|---|
| 379 | 342 | | 3form<br>*3-form.com* |
| **66** | *44* | | Academy of Art University<br>*academyart.edu* |
| **304** | *130* | | Adams Rite Manufacturing Co<br>*adamsrite.com* |
| **352** | *312* | S | Advance Lifts<br>*advancelifts.com* |
| **338, 350** | | | AIA<br>*aia.org* |
| **372** | | | AIA<br>*aia.org* |
| **114** | *85* | S | Alcan Composites USA Inc<br>*alucobond.com* |
| **148** | *95* | S | Alcoa Architectural Products<br>*alcoacladdingsystems.com* |
| **333** | *142* | | Alkco<br>*alkco.com* |
| **349** | *310* | | APA: The Engineered Wood Assn<br>*glulambeams.org* |
| **352** | *313* | | Arakawa Hanging Systems<br>*arakawagrip.com* |
| **330** | *141* | | Architectural Area Lighting<br>*aal.net* |
| **335** | *144* | | Architectural Details<br>*arch-details.com* |
| **353** | *314* | S | Architectural Precast Association<br>*archprecast.org* |
| **40** | | | Architectural Record<br>*archrecord.construction.com* |
| **31** | *16* | | Architectural Woodwork Institute<br>*awinet.org* |
| **98** | *72* | | Associated Builders & Contractors Inc<br>*abc.org* |
| **332** | *363* | | Ardee<br>*ardeelighting.com* |
| **12** | | | Autodesk<br>*autodesk.com* |
| **363** | *324* | | Autodessys<br>*formz.com* |
| **32** | *17* | | Avonite<br>*avonite.com* |
| **339** | *301* | | Axium<br>*axiumae.com* |
| **33** | *18* | | B-K Lighting<br>*bklighting.com* |
| **59** | *149* | | BEGA<br>*bega-us.com* |
| **305** | *131* | S | Belden Brick Company, The<br>*beldenbrick.com* |
| **70** | *48* | S | Bendheim<br>*bendheim.com* |
| **113** | *84* | | Blanco<br>*blancoamerica.com* |
| **368** | | | BNi Building News<br>*bnibooks.com* |
| **231** | *109* | | Boyd Lighting<br>*lightspacebyboyd.com* |
| **47** | *29* | S | BR 111<br>*BR111.com* |
| **96** | *70* | S | Bradley Corporation<br>*bradleycorp.com* |
| **307** | *133* | | Brew Express<br>*brewexpress.com* |
| **92** | *67* | | Building Systems Design<br>*bsdsoftlink.com* |
| **15, 105** | *38, 78* | S | C/S Group<br>*c-sgroup.com* |
| **23** | *11* | S | Cambridge Architectural Mesh<br>*architecturalmesh.com* |
| **80** | *58* | S | Canterbury International<br>*canterburyintl.com* |
| **78** | *56* | S | Carl Stahl Décor Cable<br>*decorcable.com* |
| **112E** | *359* | | Carvart<br>*carvart.com* |
| **376** | | | Cascade Coil Drapery<br>*cascadecoil.com* |
| **259** | *116* | | Cedar Shake & Shingle Bureau<br>*cedarbureau.org* |
| **39** | *24* | S | Ceilings Plus<br>*ceilingsplus.com* |
| **48** | *30* | S | CENTRIA Architectural Systems<br>*centria.com* |
| **76** | *54* | S | CertainTeed<br>*certainteed.com* |
| **342** | *303* | | Chicago Architecture Foundation<br>*architecture.org* |
| **306** | *132* | S | CHMI<br>*chmiarch.com* |
| **24** | *12* | | CNA/Victor O Schinnerer & Co Inc<br>*schinnerer.com* |
| **67** | *45* | | Colorker<br>*colorker.com* |
| **325** | *139* | | Cooper Lighting<br>*cooperlighting.com* |
| **373** | *333* | S | Copper Sales Inc<br>*unaclad.com* |
| **45** | *27* | S | Cornell Iron Works<br>*cornelliron.com* |
| **344** | *305* | S | CPI International<br>*cpidaylighting.com* |
| **256** | *113* | S | CR Laurence Co Inc<br>*crlaurence.com* |
| **255** | *112* | | CSi Metal Dek Group<br>*metaldek.com* |
| **257** | *114* | | Custom Building Products<br>*custombuildingproducts.com* |
| **90** | *66* | | Dacor<br>*dacor.com* |
| **100** | *74* | S | DaVinci Roofscapes<br>*davinciroofscapes.com* |
| **346** | *307* | | Dawson Doors<br>*dawsondoors.com* |
| **cov3** | | | Dell<br>*dell.com* |
| **335** | *146* | | Delray Lighting Incorporated<br>*delraylighting.com* |
| **376** | *336* | | Doug Mockett & Company Inc<br>*mockett.com* |
| **381** | *347* | | Doug Mockett & Company Inc<br>*mockett.com* |
| **343** | *304* | S | Dryvit<br>*dryvit.com* |
| **89** | *65* | S | DuPont Tyvek<br>*tyvek.com* |
| **112B** | *357* | S | E Dillon & Company<br>*edillon.com* |
| **139** | *91* | S | Eagle Windows & Doors<br>*eaglewindow.com* |
| **72** | *50* | S | Easi-Set Industries<br>*easiset.com* |
| **150** | *96* | S | EFCO Corporation<br>*efcocorp.com* |
| **41-43** | *25* | S | Eldorado Stone<br>*eldoradostone.com* |
| **56, 57** | *35, 36* | S | Ellison Bronze<br>*ellison-bronze.com* |
| **340** | *302* | | Energy Steel Products<br>*energysteelproducts.com* |
| **102** | *75* | | Engineered Lighting Products<br>*elplighting.com* |
| **357** | *318* | S | Englert<br>*englertinc.com* |
| **35** | *20* | S | EPIC Metals Corporation<br>*epicmetals.com* |
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| **127** | *88* | S | Ferrari Textiles Corporation<br>*soltis-textiles.com* |
| **155** | *97* | S | Follansbee Steel<br>*follansbeeroofing.com* |
| **318-319** | *137* | | Gardco Lighting<br>*sitelighting.com* |
| **129** | *89* | S | Ginger<br>*motiv.us* |
| **184** | *102* | | Graboplan<br>*graboplan.us* |
| **60** | *39* | | Greenscreen<br>*greenscreen.com* |
| **75** | *53* | | Gres de Aragon<br>*gresaragon.com* |
| **380** | *344* | S | Hafele<br>*hafeleonline.com* |
| **369** | *330* | | Harmonic Environments<br>*harmonicenvironments.com* |
| **cov4** | *355* | S | Haworth<br>*haworth.com* |
| **46** | *28* | | HDR<br>*hdrinc.com* |
| **267** | *119* | S | High Concrete Structures Inc<br>*highconcrete.com* |
| **381** | *346* | | Historical Arts & Casting Inc<br>*historicalarts.com* |
| **348** | *309* | S | Huntco<br>*huntco.com* |
| **cov2-1** | *147* | S | Hunter Douglas Architectural Prods<br>*hunterdouglas.com* |
| **175** | *101* | | HY-Lite<br>*hy-lite.com* |
| **160** | *98* | | IGT Glass<br>*glastroesch.ch* |
| **283** | *128* | S | illbruck<br>*illbruck-archprod.com* |
| **355** | *316* | S | Inclinator Co of America<br>*inclinator.com* |
| **26-27** | *13* | S | InterEdge Technologies<br>*firesafe-glass.com* |
| **351** | *311* | | International Code Council<br>*iccsafe.org* |
| **380** | *345* | | International Code Council<br>*iccsafe.org* |
| **378** | *338* | S | Invisible Structures Inc<br>*invisiblestructures.com* |
| **134** | *365* | | Invision/J&J Industries<br>*invisioncarpet.com* |
| **371** | *332* | | Italian Trade Commission<br>*marblefromitaly.com* |
| **332** | *363, 364* | | JJI Lighting Group<br>*jjilightinggroup.com* |
| **333** | *142* | | JJI Lighting Group<br>*jjilightinggroup.com* |
| **378** | *339* | | Joel Berman Glass Studios<br>*jbermanglass.com* |
| **65** | *43* | | Johnson Controls<br>*johnsoncontrols.com* |
| **258** | *115* | S | Johnsonite<br>*johnsonite.com* |
| **199** | *105* | S | Julius Blum & Co Inc<br>*juliusblum.com* |
| **106** | *79* | S | Kalwall<br>*kalwall.com* |
| **61** | | S | Kawneer Company Inc<br>*kawneer.com* |
| **382** | *348* | | Kenyon<br>*kenyonappliances.com* |
| **198** | *104* | | Kepco+ Incorporated<br>*kepcoplus.com* |
| **85** | *61* | | Kim Lighting<br>*kimlighting.com* |
| **364** | *325* | S | Kingsley-Bate<br>*kingsleybate.com* |
| **201** | *107* | S | Knauf<br>*knauffiberglass.com* |
| **385** | *351* | | Koreteck<br>*koreteck.com* |
| **136, 358** | *90, 319* | | KraftMaid Cabinetry<br>*kraftmaid.com* |
| **62** | *40* | S | Kusser Aicha Graniteworks USA<br>*kusserUSA.com* |
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| **332** | *364* | | LAM<br>*lamlighting.com* |
| **64** | *42* | S | landscapeforms<br>*landscapeforms.com* |
| **359** | *320* | | @Last Software<br>*sketchup.com* |
| **375** | *335* | S | Laticrete International Inc<br>*laticrete.com* |
| **200** | *106* | | Lehigh Portland Cement Company<br>*lehighcement.com* |
| **334** | *143* | | LightingUniverse.com<br>*lightinguniverse.com* |
| **314** | *136* | | Lightolier<br>*lightolier.com* |
| **323** | *138* | | LiteTouch<br>*litetouch.com* |
| **10-11** | *6* | | Loewen<br>*loewen.com* |
| **185** | *103* | S | Lonseal<br>*lonseal.com* |
| **93** | *68* | | Lucifer Lighting Company<br>*luciferlighting.com* |
| **329** | *140* | | Lumec & Lumec Scheder<br>*seegreatshapes1.com* |
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| **312-313** | *135* | S | Lutron<br>*lutron.com* |
| **382** | *349* | S | Major Industries<br>*majorskylights.com* |
| **74** | *52* | | Manning Lighting<br>*manningltg.com* |
| **174** | *100* | | Marble Institute of America Inc, The<br>*marble-institute.com* |
| **94** | *69* | | Marshfield DoorSystems<br>*marshfielddoors.com* |
| **20-21** | *9* | | Marvin Windows & Doors<br>*marvin.com* |
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| 269 | 120 | | Mitsubishi Chemical America Inc<br>alpolic-usa.com |
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| 112 | 83 | S | Mortar Net<br>mortarnet.com |
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| 260 | 117 | S | National Gypsum Company<br>nationalgypsum.com |
| 230 | 108 | S | National Terrazzo & Mosaic Assn<br>ntma.com |
| 368 | 329 | S | Nixalite of America<br>nixalite.com |
| 112C | 358 | | NJ SmartStart Buildings<br>njsmartstartbuildings.com |
| 16-17 | 7 | S | Oldcastle Glass<br>oldcastleglass.com |
| 38 | 23 | | Olympic Panel Products<br>olympicpanelproducts.com |
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| 73 | 51 | | Powder Coating Institute, The<br>powdercoating.org/101 |
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| 141 | 92 | S | PPG (Pittsburgh Paints)<br>pittsburghpaints.com |
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| 310-311 | 134 | | Prudential Lighting<br>prulite.com |
| 58 | 37 | | Quilite Noise Barriers<br>quilite.com |
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| 284-291 | 366 | S | Sloan Valve Company<br>sloanvalve.com |
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| 54, 55 | 33, 34 | | Steelcase<br>steelcase.com |
| 347 | 308 | | Steelscape<br>steelscape-inc.com |
| 145 | 94 | S | Sto Corp<br>stocorp.com |
| 366 | 327 | | Stone River Bronze<br>stoneriverbronze.com |
| 360 | 321 | | Sun Valley Bronze<br>svbronze.com |
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| 49 | 31 | | Tile of Spain<br>spaintiles.info |
| 81 | 59 | S | Timely<br>timelyframes.com |
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| 270 | 121 | S | Trespa<br>trespanorthamerica.com |
| 367 | 328 | | US Green Building Council<br>usubc.org |
| 52, 53 | | S | USG Corporation<br>usg.com |
| 50 | 32 | | Valli & Valli<br>vallievalli.com |
| 271 | 122 | | VERSA-LOK<br>versa-lok.com |
| 44 | 26 | S | Viking Range Corporation<br>vikingrange.com |
| 108 | 81 | S | Viracon<br>viracon.com |
| 122 | 86 | | Vistawall Architectural Products<br>vistawall.com |
| 32A-D | | | VT Industries<br>vtindustries.com |
| 28-29 | 14 | | Vulcraft, A Division of Nucor Corp<br>nucor.com |
| 335 | 145 | | WAC Lighting<br>waclighting.com |
| 36 | 21 | | Walker Zanger<br>walkerzanger.com |
| 112F | 360 | S | Wasco Skylights<br>wasco1.com |
| 34 | 19 | S | Wausau Window and Wall Systems<br>wausauwindow.com |
| 2-3 | 1 | | Weather Shield Windows & Doors<br>weathershield.com |
| 86 | 62 | | Westcrowns Inc<br>westcrowns.com |
| 398 | 354 | | Western Red Cedar Lumber Assoc<br>realcedar.org |
| 18-19 | 8 | | Williams Scotsman<br>williamsscotsman.com |
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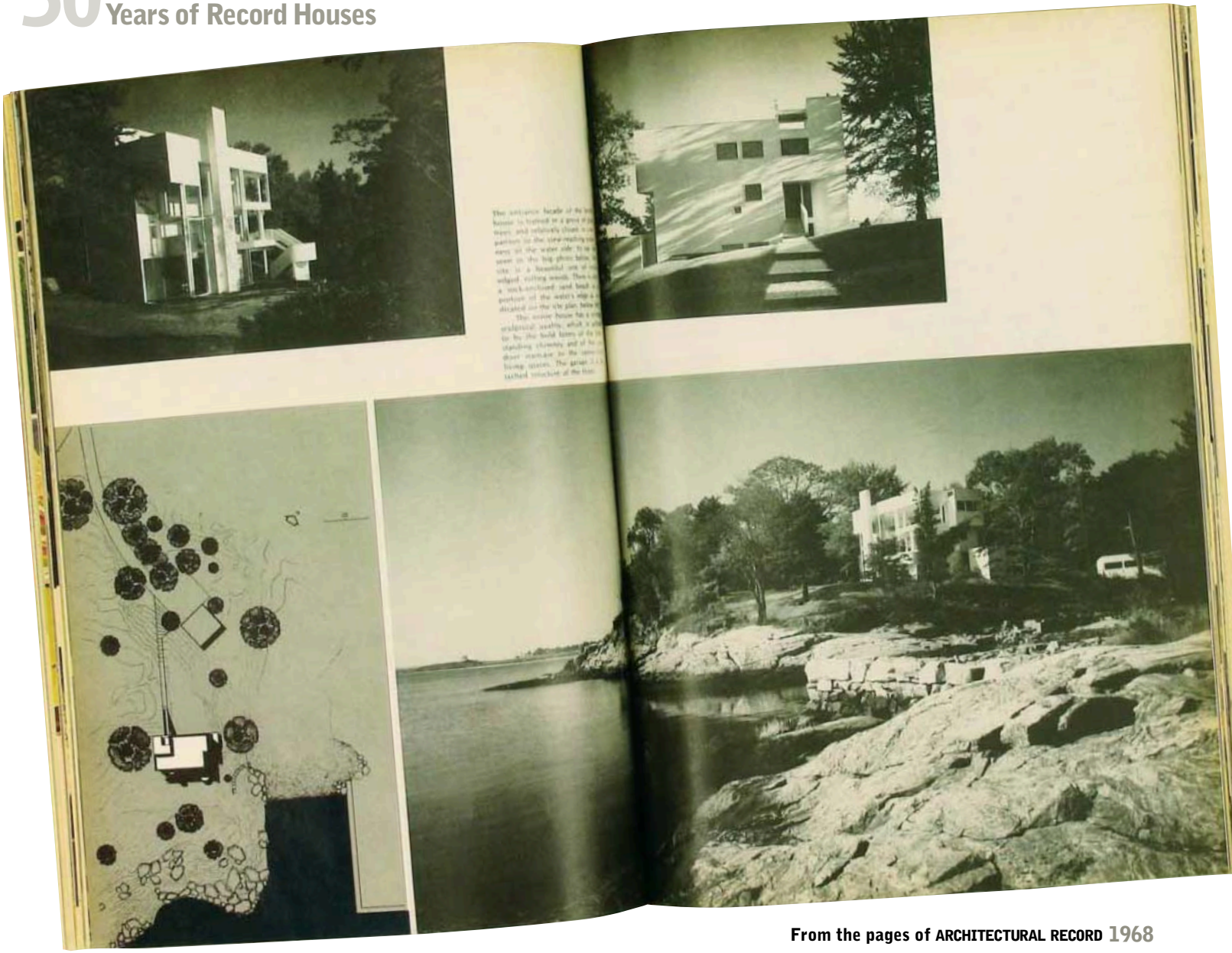
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From the pages of ARCHITECTURAL RECORD 1968

# Meier's Milestone Moment

**By William Weathersby, Jr.**



PHOTOGRAPHY: © SCOTT FRANCES/ESTO (BOTTOM)

Set on the craggy coast of Long Island Sound in Darien, Connecticut, Richard Meier's Smith House is a Modernist lighthouse of transparent geometry. Critic Kenneth Frampton called it "a panoramic belvedere overlooking the rocky shoreline," a work of "neopurist" architecture that harked back to the best of Le Corbusier. One of Meier's first major residential projects, the house also represented a turning point in his career.

When he won the commission for it in 1965, the 31-year-old Meier had been running his own firm for two years after apprenticing in the studio of Marcel Breuer. "The Smith House was a seminal project for me," Meier acknowledges today. "It allowed me to articulate some ideas I was starting to pursue, such as the balance between public and private space."

Designed as a weekend retreat for New Yorkers Carole and Fred I. Smith and their two young sons, the house capitalizes on its dramatic 1.5-acre site. Beyond a dense cluster of evergreens, the land clears and rises to the center of the site, then drops sharply to the rugged shoreline and a small, sandy cove. The spatial organization of the house hinges on the program-



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**This page: A later addition to the west extended over a bathhouse (to right in photo above). Meier also designed the desk (below).**

**Previous page: The house embraced its waterfront setting in 1968 (top), and is now shaded by towering trees.**



*(continued from previous page)* matic separation between public and private areas. From the front walkway, visitors approach a mostly opaque white wood facade before crossing a ramp and entering on the house's second level to discover what Meier calls a "180-degree explosion" of light and space. The living room, dining area, and study embrace the waterfront views, pinwheeling in a three-level enclosure of glass on three sides. The family's private quarters, meanwhile, are stacked to hug the street-facing facade of the 2,800-square-foot building.

Elements that would become Meier signatures are present as well: the pristine white exterior, expanses of plate glass framed by finely proportioned piers and mullions, and minimal interiors creating intersecting volumes. When the Smith House was published as the cover story of Record Houses in May 1968, the editors noted that "design impact is produced by the simplest means, with no frills and a remarkable absence of most current architectural clichés."

Soon after the house was completed, the Smiths divorced. When Carole later married Herrick Littlefield, the family decided to make Darien their full-time residence, and Meier was enlisted to expand the house. Completed in 1973, the 300-square-foot addition enlarged the master suite and added closets and support spaces. Today, the Littlefields again enjoy the house as a weekend place, "where the play of light is incredible year-round," Carole says.

"I believe the success of the house lies in the capacity to absorb and enter into a dialogue with the temporal phenomena of light and context," Meier concurs. "They are, in the end, its material." ■

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